March 2006

RCRAInfo CM&E EVALUATION – VIOLATION FORM

EPA ID Number	PAD003015328			EIN	
Handler Name	Raymark Industries/Phoenix Group Llc.				
Street	123 East Stiegel Street				
City	Manheim	State	PA	Zip Code	17545

Actual Generator Status *Check only if different from Notified Status.* LQG ☐ SQG ☐ CESQG ☐ Closed ☒ Non-Handler ☐

Universe Change Required? *(Generator Status Change Required)* YES ☐ NO ☒ If **YES**, complete the Universe Change Section (on reverse side of this form).

RCRA Non-Notifier? YES ☐ NO ☒ If **YES**, complete the Handler Section (on reverse side of this form).

Other Facility Information Changes? YES ☐ NO ☒ If **YES**, complete the Handler Section (on reverse side of this form).

EVALUATION ☒ **Add** ☐ **Update** ☐ **Delete** ***You must provide an Evaluation Identifier (also known as the Sequence Number).***

*Evaluation Identifier	*Type	*Evaluation Start Date (mm/dd/yyyy)	*Agency	Responsible Person	Suborganization
	GME	6/8/2017	S	SLO	BWM

Day Zero (mm/dd/yyyy): *You need to specify Day Zero for all evaluation types except CDI, CSE, FUI, SNY, and SNN, otherwise it defaults to Evaluation Start Date. For CDI, CSE, FUI, and SNY evaluations, you must select a previous CEI Start Date for the Day Zero. SNN evaluation type does not require a Day Zero.* 6/20/2014

Reclassified SV Date: *Only applicable for SNY evaluation type as appropriate.*

Notes:

Evaluation Indicator Field *(Check all that apply)*

☐ **Citizen Complaint** ☐ **Multimedia Inspection** ☒ **Sampling** ☐ **Not Subtitle C**

Focused Coverage Areas (Use Only for Evaluation Type FCI)

Regulation-Specific FCI

BIF ☐ CCI ☐ CFI ☐ INC ☐ LDR ☐ PTB ☐ PTX ☐
THI ☐ UIC ☐ UOI ☐ UWR ☐ OTHER (specify): _____

Routine/Standardized FCI

CAR ☐ CPC ☐ DOS ☐ EMR ☐ IEI ☐ ISI ☐ RTI ☐

Does this Evaluation Add/Update/Delete a Violation?	YES ☐ NO ☒	***If Yes, fill in the Violations Section(s) on page 2 of this form.***
Does this Evaluation link to a Commitment?	YES ☐ NO ☒	***If Yes, please use the RCRAInfo 3007 Information Requests and Commitments Form.***
Does this Evaluation link to a 3007 Request?	YES ☐ NO ☒	***If Yes, please use the RCRAInfo 3007 Information Requests and Commitments Form.***

OUTSTANDING VIOLATIONS COVERED BY ABOVE EVALUATION? YES ☐ NO ☐ ***If Yes, fill in information below.***

*Seq. No.	*Violation Type	*Agency	*Regulation Citation (Type + Citation) (ex. FR 262.1)	*Date Determined (mm/dd/yyyy)

***Required Fields**

EPA ID Number	Handler Name
AD003015328	Raymark Industries/Phoenix Group Llc.

VIOLATIONS SECTION
(Additional Violations can be added/updated/deleted using the RCRAInfo CM&E Additional Violations Form)

VIOLATION ☐ Add ☐ Update ☐ Delete — **Link to Above Evaluation** ☐

Seq. No	*Violation Type*	*Agency*	*Determined Date (mm/dd/yyyy)*	*Return to Compliance (RTC) Qualifier*	*Actual RTC Date (mm/dd/yyyy)*

*A RTC Qualifier is **required** if entering an Actual RTC Date.*

Notes:

LINK CITATIONS TO ABOVE VIOLATION? YES ☐ NO ☐ — ***If Yes, fill in information below***

Citation Type	*Citation*	*Citation Type*	*Citation*

VIOLATION ☐ Add ☐ Update ☐ Delete — **Link to Above Evaluation** ☐

Seq. No	*Violation Type*	*Agency*	*Determined Date (mm/dd/yyyy)*	*Return to Compliance (RTC) Qualifier*	*Actual RTC Date (mm/dd/yyyy)*

*A RTC Qualifier is **required** if entering an Actual RTC Date.*

Notes:

LINK CITATIONS TO ABOVE VIOLATION? YES ☐ NO ☐ — ***If Yes, fill in information below***

Citation Type	*Citation*	*Citation Type*	*Citation*

HANDLER SECTION ***(Fill out if RCRA Non-Notifier)***

Handler Name		**Contact**			
Street					
City		**State**		**Zip Code**	
County					

UNIVERSE CHANGE SECTION ***(Fill out if Universe Change Required)***

i. Indicate the Facility's current Universe(s):

ii. Indicate the new RCRAInfo Generator Universe:
Note: All TSD activity changes must be handled by the IOR and cannot be made using this form.

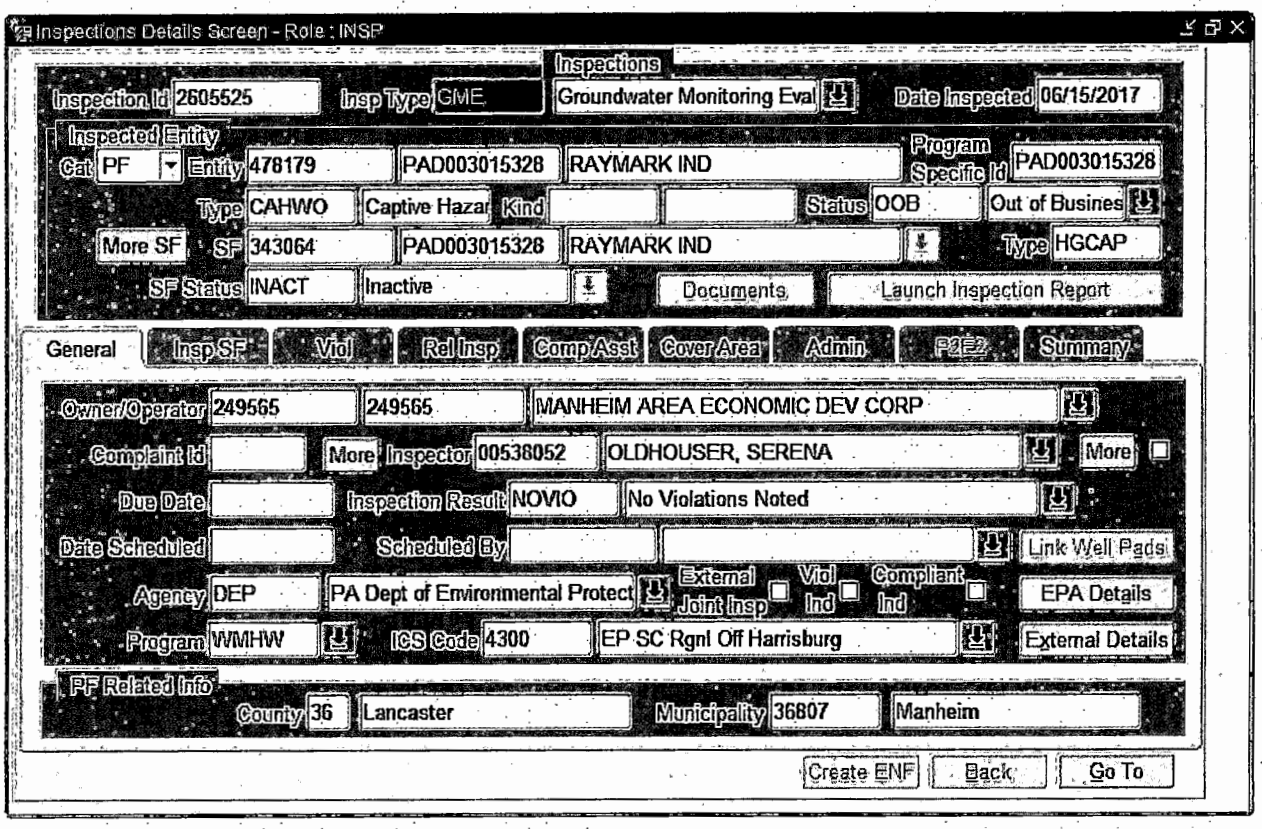
LQG ☐ SQG ☐ CEG ☐
Non-Handler ☐ Closed ☐

iii. Indicate the new transporter status:
(*Only fill out if the facility requires a transporter status change***)**

Transporter ☐
If the transporter box is checked, you must check at least one mode of transportation below:
☐ Air ☐ Water
☐ Rail ☐ Other
☐ Highway

Non-Transporter ☐
Check non-transporter if the facility is currently listed in RCRAInfo as a transporter AND no longer transports hazardous waste.

***Required Fields**


Inspections Details Screen - Role : INSP
Inspections
Inspection Id 2605525
Insp Type GME
Groundwater Monitoring Eval
Date Inspected 06/15/2017
Inspected Entity
Cat PF
Entity 478179
PAD003015328
RAYMARK IND
Program Specific Id PAD003015328
Type CAHWO
Captive Hazar
Kind
Status OOB
Out of Busines
More SF
SF 343064
PAD003015328
RAYMARK IND
Type HGCAP
SF Status INACT
Inactive
Documents
Launch Inspection Report
General
Insp SF
Viol
Rel Insp
Comp Asst
Cover Area
Admin
P2E2
Summary
Owner/Operator 249565
249565
MANHEIM AREA ECONOMIC DEV CORP
Complaint Id
More
Inspector 00538052
OLDHOUSER, SERENA
More
Due Date
Inspection Result NOVIO
No Violations Noted
Date Scheduled
Scheduled By
Link Well Pads
Agency DEP
PA Dept of Environmental Protect
External Joint Insp
Viol Ind
Compliant Ind
EPA Details
Program WMHW
ICS Code 4300
EP SC Rgnl Off Harrisburg
External Details
PF Related Info
County 36
Lancaster
Municipality 36807
Manheim
Create ENF
Back
Go To

Former Raymark Industries

2017 Groundwater Monitoring Evaluation

Table of Contents

FIGURES

TABLE

APPENDICES

1.0 INTRODUCTION

Raymark Industries, Inc. (Raymark) owned and operated an asbestos product manufacturing plant located on East Stiegel Street, Manheim Borough, Lancaster County, Pennsylvania. A site location map is included as **Figure 1**. Operations began in 1908. As operations expanded, additional property was acquired; in total approximately 90 acres was owned by Raymark. The facility was in operation for approximately 90 years, producing materials for use in clutch, brake and other specialty friction applications.

Because of asbestos lawsuits and declining market share, Raymark (and several subsequent business names) went in and out of Chapter 11 bankruptcy for several years. As a result, Raymark was unable to exist as a manufacturing entity and operations ceased in 1997.

A revitalization effort was undertaken, with several parties purchasing portions of the property for redevelopment in 2000. Currently, the land previously operated as Raymark contains numerous buildings which house offices, commercial space, automobile reconditioning businesses, and parking areas.

The facility is comprised of five general areas as described below:

- Upper Mill (Upper Facility) is approximately 25 acres, containing buildings constructed from the 1930's through the 1970's. Manufacturing took place in the Upper Mill.
- Lower Mill (Lower Facility) is approximately 10 acres and the main manufacturing area during the early years of operation.
- A 10.5-acre closed Resource Conservation and Recovery Act (RCRA) landfill is located along the western boundary of the Upper Mill. This is generally referred to as the Upper Mill Landfill.
- A 4.7-acre landfill is located southeast of the Lower Mill area, just beyond the railroad line at the confluence of Chiques Creek and Doe Run. This is generally referred to as the Lower Mill Landfill.
- Non-manufacturing/waste areas comprise the remainder of the 92-acres. Office buildings, fields, and wetlands currently occupy these areas.

The Upper and Lower Mill areas, as well as both landfills, have been subjected to extensive environmental investigations and remediation activities over the past 25 years. A map depicting these five areas is included as **Figure 2**. To provide a general overview of the site as a whole, the following is a brief summary of the investigations conducted under Pennsylvania Department of Environmental Protection (PADEP) programs:

Waste Management Program

The RCRA (Upper Mill) landfill was permitted as an industrial waste landfill by the Pennsylvania Department of Environmental Resources (PADER) in 1977 and operated until 1987. The landfill occupies 10.5 acres and contains approximately 186,000 cubic yards of waste material. The landfill received off-specification

products, binding agent wastes and dust collector fines from grinding and finishing operations. The dust collector fines from bag houses on the facility were classified as hazardous waste due to a lead content in excess of 5.0 milligrams per liter (mg/l) when subjected to the EP Toxicity Leaching Procedure [40 CFR Ch.1, Part 261.24(a)]. Because the dust collector material was mixed with other waste in the landfill, the entire landfill was classified as hazardous waste (D008). Asbestos waste in the form of off-specification friction products was also disposed in the landfill.

The landfill was covered and closed December 20, 2000, as approved by PADEP, although not in the manner consistent with RCRA requirements. A portion of the landfill had been paved with asphalt and tennis courts were built for recreational use by the local community. The last phase of the landfill was closed with a vegetated earthen cover. The landfill closure was a compromise forced by the financial insolvency of the company and the need for immediate environmental safeguards and public safety.

This Upper Mill RCRA landfill is the subject of the inspection conducted June 8, 2017. Its history and current status is detailed in subsequent sections of this report.

Land Recycling Program

Lower Mill Investigations

January 2003– Five underground storage tanks (USTs) ranging in size from 1,000-12,000 gallons which had contained alcohol, toluene, and gasoline were removed. This work was done on behalf of the Phoenix Group. The investigation was completed by attaining a combination of Statewide Health Standards (SHS) and Site-Specific Standards (SSS) via pathway elimination for soil and groundwater. A deed restriction placed on the Lower Mill property precludes the use of on-site soil for agricultural or any other use and requires that soils excavated from the restricted areas must be properly characterized prior to leaving the site. A Post-Remedial Care Plan (PRCP) requires quarterly inspection of the asphalt cover to ensure surface water flow is free and to identify any erosion/damage to paved areas. Any damage is to be repaired in the same calendar quarter in which it is identified. The PRCP also included the requirement to conduct a vapor intrusion investigation (VI) on the Lower Mill Facility. The VI investigation was subsequently conducted and accepted by PADEP.

May 2008 - Three areas of concern were identified during excavation/demolition site work.

- Two gasoline USTs;
- Non-soil material consisting of phenol in two areas; and
- Historical petroleum-impacted soil area along retaining wall adjacent to Chiques Creek.

This work was done on behalf of the Manheim Area Economic Development Corporation (MAEDC). The phenol material and historical petroleum-impacted soils were incorporated into a consolidation berm and capped; the USTs were removed. The PRCP includes periodic inspection to check condition of the non-woven geotextile liner and soil cover. Any damage is to be repaired in the same calendar

quarter that it is identified. Additionally, an environmental covenant was placed on the property which mandates that groundwater shall not be used or accessed by any person as potable unless the groundwater is remediated to an appropriate standard, soil within the consolidated berm shall not be disturbed or relocated without Department permission, and compliance with PRCP (including periodic inspections and maintenance of impermeable cap).

Upper Mill Investigation

May 2003– Eleven USTs, ranging in size from 1,500 to 25,000 gallons and which had contained #2 fuel oil, toluene, heptane, alcohol, thinner, and kerosene, were removed. This work was done on behalf of the Phoenix Group. The investigation was closed by attaining a combination of SHS and SSS via pathway elimination for soil and groundwater. A deed restriction and PRCP identical to the Lower Mill were also included. The deed restriction placed on the Upper Mill property precludes use of on-site soil for agricultural or any other use. Any soils excavated from the restricted areas must be properly characterized prior to leaving the site. The PRCP requires quarterly inspection of the asphalt cover to ensure surface water flow is free and to identify any erosion/damage to paved areas. Any damage is to be repaired in the same calendar quarter in which it is identified. The PRCP also included the requirement to conduct a VI on the Lower Mill Facility. The VI investigation was subsequently conducted and accepted by PADEP.

Hazardous Sites Cleanup Act (HSCA)

The Lower Mill contains a 4.7-acre closed landfill with waste materials from Lower Mill Area manufacturing activities. This area had settling lagoons into which lead and asbestos waste was disposed from 1962 through 1973. The waste included soil-like material from dust collectors which contained lead and asbestos. Waste material was reportedly removed from the lagoon in 1973 and moved to the Upper Mill landfill.

As part of the HSCA project, lead and asbestos material was removed from the former lagoon berm located within the floodplain, incorporated into the existing landfill, and capped with a 2-foot soil cover. A railroad right-of-way excavation project was conducted to remove waste material from the railroad bed owned by Norfolk Southern. Additionally, a stream bank restoration project was conducted to stabilize and prevent waste material from being exposed by stream bank erosion.

An Administrative Order attached to the deed for this portion of the site requires the property owner to conduct inspections of the site, report the findings to PADEP, and repair any identified problems. The Order also includes a provision that the property shall not be used for residential purposes, prevents the excavation or construction on top of the soil cover without Department approval, and prevents the groundwater being used for any purpose.

2.0 REGULATORY HISTORY AND CURRENT STATUS

In the late 1970's, the Department permitted the Upper Mill Landfill. Raymark had been operating the landfill for many years when RCRA became effective in

Pennsylvania. A RCRA Part A permit involved a demonstration of compliance with reporting, monitoring and operational, as opposed to design, requirements. A Part B application was to provide engineering design details showing that the landfill met the requirements of RCRA. A Part B application was submitted to the Department on December 8, 1983. The existing landfill did not meet the exclusionary siting criteria (it is in the floodplain of Chiques Creek and on carbonate bedrock) or the design requirements, in that it was an unlined landfill. A variance request was submitted in January of 1984. These documents claimed that waste material placed onto existing ground provided equivalent environmental protection to that of a double lined landfill. Since Raymark had already embarked on a groundwater assessment program due to groundwater degradation from the landfill, the Department determined that equivalent protection to groundwater was not being provided. By letter dated March 1, 1985, the Department denied Raymark's Part B application and variance requests. Raymark was notified that a closure plan for the landfill would be required.

A closure plan was submitted to the Department on April 24, 1987. This plan again requested variance from closure requirements for isolation distance to groundwater and capping and cover requirements. A review letter dated September 23, 1987 included the following major deficiencies:

- An asphalt cap was proposed;
- Waste material was below the regional water table; and
- Waste was disposed within the 100-year floodplain of Chiques Creek.

A revised Closure Plan was submitted to the Department in May of 1990. This plan proposed the same basic approach as the 1987 plan, except that waste was to be removed from the floodway of the creek. Raymark maintained that, as a company, they were financially incapable of executing a landfill closure that would meet RCRA requirements.

A consent order and adjudication (COA) was negotiated and signed by representatives of Raymark Industries, Raymark Corporation, Raymark Friction, Raytech Corporation and the Department on March 11, 1991. Closure activities were to be started after approval of the 1991 Closure and Post-Closure Plan and the April 1992 revision. This approval was granted on July 2, 1992.

In 1996, temporary soil cover on the eastern (non-asphalt) portion of the landfill had begun to erode. Raymark neglected to submit the required permit applications for stream and wetland encroachments. In short, Raymark (various corporate entities) had failed to take any substantive action that would have resulted in completion of the approved closure plan. The Department's Office of Chief Counsel considered enforcement options and issued a *Petition for Enforcement of Administrative Order* to Raymark, which would compel them to defend in Commonwealth Court their lack of action on the agreed upon Closure Plan. Concurrently, Notices of Violation (NOVs) were issued to Raymark for:

- Failure to conduct groundwater monitoring (June 26, 1996); and
- Parking vehicles on the surface of the asphalt-paved portion of the hazardous waste landfill (July 12, 1996).

No groundwater monitoring had been done in the first half of 1996. The first quarter was missed (per on-site personnel accounts) due to heavy snow accumulations and the second quarter was intentionally missed in an effort to save money. Consequently, no split-sample results accompanied the 1996 Comprehensive Monitoring Evaluation (CME) report. A third quarter sample was taken by the facility after the Department's Notice of Violation was issued. Department personnel were unavailable to sample on the date that this event took place. Considerable field and legal staff time was expended in enforcement actions at this facility during the fiscal year 1996.

The Department's *Petition to Enforce* resulted in an August 18, 1996 Commonwealth Court hearing. The resulting August 19, 1996 Order of the Court required Raymark to comply with the March 19, 1991 Order and to pay a civil penalty to the Department.

RT Environmental Services, Inc. (RT) was retained by Raymark to implement the 1991 Closure Plan. Preliminary activities started at the facility in 1996. The Court Order contained stipulated penalties for failure to comply with a schedule of events contained in the Order. Raymark had 6 months (excluding the months of December, January and February) to complete the closure of the landfill. Groundwater monitoring had resumed. The facility was briefly in compliance with the rules and regulations of the Department as of the date of the 1996 CME report.

Closure activities did indeed begin in 1996. Waste delineation based on lead and asbestos required the removal of material outside a fence surrounding the landfill. Waste removal and consolidation was completed, although questions remained about the location of confirmatory soil samples submitted by RT. Closure activities continued sporadically through 1997 and into 1998. Groundwater monitoring resumed but was discontinued after the first quarterly sample of 1998.

Later in 1998, Raymark had once again resorted to bankruptcy protection. Letters from the Department's legal counsel were directed to the Chapter 11 Trustee, Laureen M. Ryan, who was appointed by order of the U.S. Bankruptcy Court on November 5, 1998. In February 1999, the law firm of Pepe & Hazard was retained to represent the trustee for Raymark Industries, Inc. This law firm responded to the Department's request that they complete closure at the landfill and address outstanding UST issues at the Manheim facility. A NOV was sent to the trustee for the UST irregularities on the Raymark property.

By letter dated June 11, 1999, Gary Brown of RT, consultant to the site operator, requested that the Department release money held in a Post Closure Care Fund, so that closure of the landfill could proceed. By RT's assessment, closure was approximately 95% complete. They provided an itemized list of outstanding issues and proposed (to Kahn Engineering, which had been retained by the trustee's law firm) an implementation and cost schedule to complete closure. RT (representing Raymark Industries) did not propose, nor were they willing to resume, groundwater monitoring. An October 20, 1999 letter from the Department informed the law firm representing the trustee that the Department would embark on closure of the landfill, while reserving the right to seek reimbursement of closure-related expenses.

The letter also requested that Raymark remove the automobiles destined for the Manheim Auto Auction, as they posed an impediment to the Department's action.

As of the beginning of March 2000, Raymark responsible parties had not resumed closure activities. The Department had begun the process of evaluating the site for the remaining closure work to be performed under HSCA. Later in the month, Mr. Siegel spoke with Jim Graham, attorney for the Raymark trustee. The Department was informed that the trustee had a potential buyer for the property and that closure and cleanup issues would be addressed quickly.

On March 16, 2000, the Department communicated with RT representatives on the location of an additional monitoring well, W-19. This well was necessary due to the semi-radial flow of groundwater from the saturated waste in the landfill. The well was proposed and approved as part of the Closure Plan for the landfill. On March 21, 2000, the well was drilled and constructed. Closure activities had resumed in earnest. In a letter dated March 23, 2000, Robert Benvin, Facilities Manager, set forth the remaining tasks that were necessary to complete closure of the Raymark Upper Mill Landfill. RT Environmental Services sent a letter dated March 29, 2000 that addressed the outstanding issues in Mr. Benvin's letter. Closure items were being completed through the summer and fall construction seasons. A groundwater monitoring event took place on March 30, 2000.

On December 13, 2000, the Department sent a detailed letter to RT that provided an explanation of our requirements for groundwater monitoring through the Post-Closure Care period. Subsequent discussions resulted in an acceptable monitoring program under the Post Closure Care provisions for the Raymark facility. The approved Post Closure Care Plan (PCCP), dated December 26, 2000, was accepted by the Department and put into effect.

The 2000 PCCP included a schedule of storm water, groundwater monitoring well integrity, cap integrity, and grass cutting inspections. Reporting requirements included a quarterly groundwater monitoring submittal which includes a quarterly engineer's inspection of the landfill. It also was to include records validating that post-closure care maintenance items had been satisfactory completed. An additional PCCP dated November 12, 2002 was submitted and was virtually identical to the 2000 submittal except for a reduction in the Post-Closure Care cost summary due to changes in the groundwater sampling costs.

A letter from the Department dated December 20, 2000, concurred with the owner/operator's registered professional engineer who certified that closure of the landfill had been completed in accordance with the approved plans.

In January 2001, the landfill was purchased by the Phoenix Group, LLC, who intended to redevelop the landfill parcel, as well as other parcels.

During the June 28, 2005 CME inspection, it became obvious that the landfill had not been kept secure. The soil-covered portion of the landfill had recently been disturbed by the addition of a large amount of soil fill and waste, to the extent that most of the vegetative cover was eliminated and the elevation and grading of that part of the landfill was substantially changed. Photographic evidence of this activity

as well as color aerial photography was contained in the 2005 CME report. The fill appeared as a triangular brown area immediately to the east of the largest block of cars parked on the asphalt-paved portion of the landfill.

A Phoenix Group representative stated that the soil and waste material was being generated from an adjacent portion of the Upper Mill property where rehabilitation work was taking place. The Department was informed that this material was placed on the hazardous waste landfill because the adjacent property was being re-developed under the Department's Act 2 program and that no material was to be taken from the site. This operation was active at the time of the 2005 CME inspection. No one at the Department had been contacted for approval for this disposal and no prior notice had been given by the Phoenix Group. A subsequent site visit by the Department documented the activity and resulted in written notification to the Phoenix Group of several violations of the Department's Solid and Hazardous Waste Management Regulations. A copy of this August 18, 2005 letter was included in the 2005 CME report.

On October 11, 2005, RT Environmental, consultant to the Phoenix Group, responded to the Department that they wanted to resolve the overfill issue by regrading, with the illegal fill left in place. The Department responded to this proposal by letter dated June 29, 2006, stating that the proposal was unacceptable and reminding the site owner that their PCCP required quarterly engineering inspections of the closed landfill. After several meetings and much discussion, a January 11, 2007 revised grading plan was approved by the Department. A copy of the approval letter was included in the 2008 CME report. The new plan proposed removal of the unauthorized fill back to approved elevations and a chain link fence with appropriate gating for cap maintenance. The fence would separate the paved portion of the landfill cover from the earthen-covered landfill and prevent unauthorized access. The approved plan also reminded the operator once again of their quarterly inspection obligations. Ultimately, 6,000 cubic yards overfill material was removed. Some of the removed material was to be used on the Lower Mill Landfill and the remainder removed from the property. The landfill was regraded to originally-approved contours and seeding was finished in late 2007.

Throughout various meetings and site inspections, it came to be known that the site owner, Gary Silversmith and Phoenix Group, LLC intended to donate the landfill property to the MADEC. The Authority would, in turn, transfer the property to a private owner, Lot 5 Associates. The deal would result in tax benefits for Phoenix, an expanded tax base for the Authority, and a parking area for Lot 5 Associates' business of automobile reconditioning. On May 4, 2008, the Department sent a letter to Phoenix LLC discussing the requirement for 30-year post closure bonding and requested a calculation representing the "worst-case" scenario where the asphalt cap would need to be converted to a soil cap. The amount and the provider of the bond was a point of contention.

Since the original bankruptcy of Raymark Industries, a closure bond has been held by the United States Environmental Protection Agency (USEPA) or the Department. The amount of money representing this collateral bond was $164,633.13. Much discussion centered on the amount of bonding required to maintain the site for the remainder of the PCCP.

The Department received a revised PCCP dated May 2, 2008. Essentially, the only difference in this plan and previous revisions is the section titled *PADEP Requirements,* a Plan Sheet titled "Final Landfill Closure & Access Easement", and Appendix 3 containing Post Closure Cost Calculations & Backup Estimate. By letter dated May 23, 2008, the Department approved the bond amount and the PCCP.

The December 2011 sampling event laboratory results were submitted to the Waste Management Program by Manheim Auto Parking (MAP). The cover letter indicated "The Phoenix Group, LLC is still the permittee for the former Raymark Landfill in Manheim Pennsylvania. But, they have not performed the PA DEP consent order required sampling. Manheim Automobile Parking, LLC (MAP) is possibly expected to be the future permittee. In this regard and intending to be a responsible future permittee, MAP engaged ALS Environmental to perform the second half of 2011 sampling event". MAP has continued the semi-annual sampling since this time and has included this language in each submittal.

Prior to 2013, quarterly cap inspections were conducted by a RT Environmental Engineer. During each of these inspections it was noted that the asphalt capped area has "spider web cracking" which needs to be repaired. Also, areas around the perimeter of the asphalt-capped area require weed control, as well as removal of debris and dead vegetation at the storm water discharge points. Multiple monitoring wells need to be repaired while some need to be properly abandoned. No cap inspections were submitted to the Waste Management Program from 2013 on.

In February 2016 Mr. William McMichael, III obtained the deed to the property through a public auction. The property is being used as a parking area by Manheim Auto Parking, LLC.

On March 21, 2016, during a site visit by the Department, a sinkhole was observed in the northeast portion of the asphalt cap. During a subsequent site meeting during a heavy rainstorm on March 23, 2016 the sinkhole was observed draining stormwater from most of the eastern portion of the cap at a rate of several gallons per minute. Mr. McMichael provided a temporary patch to the area by filling the hole with rocks collected from the site and sealing the surface with cold asphalt patch. The immediate area continues to subside which is causing deep enclosed depressions along an east-west line.

On January 17, 2017 an Administrative Order was issued by the Department to Mr. McMichael. The order required that the sinkhole patch continue to eliminate flow into the subsurface, submittal of a New Landowner Consent Form and Compliance History Form, and hire an environmental consult to investigate conditions which led to the sinkhole and propose abatement measures to provide permanent repair of the sinkhole and prevent reoccurrence. Mr. McMichael appealed the order on February 17, 2017.

The EPA began an investigation in June 2017 to characterize the subsurface conditions of the landfilled area. A geophysical investigation determined the top of bedrock and identified several areas of mass deficiency through a gravity survey. Groundwater samples from interior monitoring wells and piezometers as well as

private supply wells and surface water were also collected. Groundwater results indicate that low-level VOCs were identified along the eastern portion of the asphalt cap and metal concentrations in several wells were above applicable MSCs. The EPA investigation is still in progress as of the date of this report.

3.0 GROUNDWATER SAMPLING NARRATIVE AND DISCUSSION

The site's sampling and analysis plan (SAP) was approved with the PCCP and is brief. It states, in part, "A groundwater sample will be obtained by purging a minimum of three well volumes twenty-four hours prior to sampling a well." Also, "Specific conductivity, dissolved oxygen, temperature and pH will be measured and purging will be considered complete when two consecutive readings are within 10 percent of each other for each parameter."

The site is currently sampled semi-annually (2nd & 4th calendar quarters). The second quarter of 2017 groundwater sampling event took place on June 8, 2017. Monitoring was contracted to ALS Environmental (ALS) of Middletown, Pennsylvania. The Department representative, Serena Oldhouser, collected split samples from each of the wells and submitted them to the Pennsylvania Bureau of Laboratories (BOL) in Harrisburg, PA.

Monitoring well MW-9 is the background well for this site. This upgradient well is in poorly-drained, mosquito-infested woodland to the North of the landfill. The downgradient wells are MW-4, MW-6, MW-10A and MW-19. A site map depicting well locations is included as **Figure 3.**

A reduced parameter list and number of wells is in effect at the Raymark landfill. The designated wells, MW-4, MW-6, MW-9, MW-10A, and MW-19 were sampled for: total and dissolved lead, pH, specific conductivity, chloride, sulfate, and alkalinity. Groundwater elevation at each well was determined before and after purging. ALS purged all wells with a stainless steel Grundfos Redi-Flow pump. Samples were taken immediately after the purge was complete. The ALS sampler calculated and removed three well volumes of water from each well and also tracked field indicator parameters. As there were no volatile or semi-volatile parameters in the list, samples were taken from the discharge line of the pump. The dissolved metal (lead) sample was taken after an in-line field filter.

The Department's samples were collected at the same time as those of the contract lab to get as representative a "split" as possible. All samples were preserved and iced for transport immediately after they were collected. The ALS laboratory report is included as **Appendix A**. The BOL laboratory report is included as **Appendix B**.

Analytical results indicate that total and dissolved lead exceed the Maximum Contaminant Level (MCL) of 5 micrograms per liter (ug/L) in samples collected from monitoring wells MW-10A and MW-19. The highest total lead concentration was reported in MW-10A (153 ug/L by BOL) and the highest dissolved lead concentration was reported in MW-19 (7.8 ug/L by ALS). Total and dissolved lead were reported below the detection limit for all other monitoring wells. Field pH results ranged from 6.67 S.U. (MW-19 ALS) to 7.03 S.U. (MW-6 ALS). Alkalinity ranged from 197 mg/L (MW-9 ALS) to 816 mg/L (MW-10A DEP). Field specific conductance ranged from

593 umhos/cm (MW-9 ALS) to 1,502 umhos/cm (MW-10A ALS). A tabulated comparison of the results from both laboratories is included as **Table 1**. In addition to the parameters reported by ALS, the BOL laboratory report contained several additional elevated parameters. Total and dissolved iron, total and dissolved manganese, nitrate-nitrogen, sulfate, and total and dissolved zinc also exceed the MSC in one or more monitoring wells. Additionally, barium and copper were reported in several monitoring wells at concentrations below the MSC but above typical background conditions.

A comparison of laboratory sample results shows some disparity in the analytical reports. Most laboratory results are within 10% of each other except for dissolved lead in MW-10A and total lead in MW-19. BOL-reported concentrations and detection limits are significantly lower than those reported by ALS. For total and dissolved lead, BOL utilizes EPA Method 200.8 while ALS used EPA Method 6010C. It should be noted that the detection limit on the ALS laboratory report exceeds the MCL for lead.

Overall the sample results are reasonable and appear accurate. Recommendations for future sampling events are the same as the 2014 GME inspection and include ensuring that the detection limit meets or is below the PADEP MCL for lead. Collection of turbidity measurements would be helpful to evaluate the difference between total and dissolved metals. Low flow sampling may alleviate issues associated with turbid samples and total metal concentrations.

Parameter trend graphs depict the changes in concentrations over time. A review of trend plots indicate increasing total and dissolved lead concentration trends in MW-19 and total lead in MW-10A. The total lead trend observed in MW-10A is influenced by the June 4, 2009 result which created a large peak in the trend line and will continue to change the trend as additional data is collected. The total lead trend in MW-10A has a much steeper increasing trend if the June 4, 2009 data point is not included.

While total and dissolved lead in MW-19 have increasing trends, the concentrations are much lower than those reported for MW-10A, which continues to exhibit the highest concentrations observed onsite. Trend graphs are included in **Appendix C**.

4.0 RELEASE HISTORY

Approximately 186,000 cubic yards of waste material, including dust collector fines, a toxicity characteristic waste (D008), were deposited on a 10.5-acre unlined landfill adjacent to Raymark's Upper Mill. Based on the appearance of the surrounding land, this was formerly either a poorly-drained floodplain of Chiques Creek or an extension of the existing marsh. A portion of the waste exists below the water table.

Prior sampling at two wells (W-1 and W-13) in the interior of the landfill confirmed the presence of volatile organic chemicals (VOC). In the interior wells, vinyl chloride has exceeded the Pennsylvania Maximum Contaminant Level (MCL) of 2 micrograms per liter (ug/l) for drinking water. Aniline exceeded the Statewide Health Standard (SHS) of 2.8 ug/l in well W-13 in three sampling events. With the exception of trace

amounts of vinyl chloride, VOCs have not reliably been detected in perimeter monitoring wells. VOC sampling was discontinued due to lack of detections.

Total and dissolved lead continues to be detected in downgradient monitoring wells MW-10A and MW-19; trend plots are included in **Appendix D**. Monitoring well MW-19 exhibits a strongly increasing trend for total and dissolved lead. Monitoring well MW-10A has a variable but increasing trend for total lead while dissolved lead has generally been detected at concentrations below MCL. Upgradient wells have not had any lead detections in recent history.

Differences in the observed concentrations of total and dissolved lead in monitoring wells MW-10A and MW-19 indicate that there may be different subsurface conditions occurring at these two locations. Generally, the highest total lead concentrations are reported from monitoring well MW-10A, while the highest dissolved lead concentrations are reported from monitoring well MW-19.

5.0 SUMMARY

The Raymark Industries Manheim facility closed its Upper Mill Landfill in accordance with a version of its DER-approved Closure Plan (modified 1991). This closure began in 1996 under a Commonwealth Court order and was completed and documented under the supervision of RT Environmental. The final Department certification inspection took place on December 7, 2000. A letter dated December 20, 2000 verified that the closure had been completed in accordance with the approved Closure Plan.

Monitoring well MW-19 does not have a well cap and MW-6 has a damaged cap that cannot be secured. Most of the wells were not locked. Vegetation in the vicinity of all wells should be thinned or mowed due to excessive poison ivy. The closure plan requires quarterly cap inspections to be conducted by a Professional Engineer. Cap inspections have not been submitted to PADEP since 2012.

As a result of the groundwater monitoring inspection conducted by this writer on June 8, 2017, the Raymark Upper Mill Landfill is currently in compliance with the RCRA groundwater monitoring requirements; however, other issues at the site (cap condition and subsidence) are not satisfactory at this time. Recommendations for future groundwater sampling events at the site include ensuring that detection limits at or below the MCL for lead and the addition of turbidity analysis.

FIGURES

Former Raymark Facility

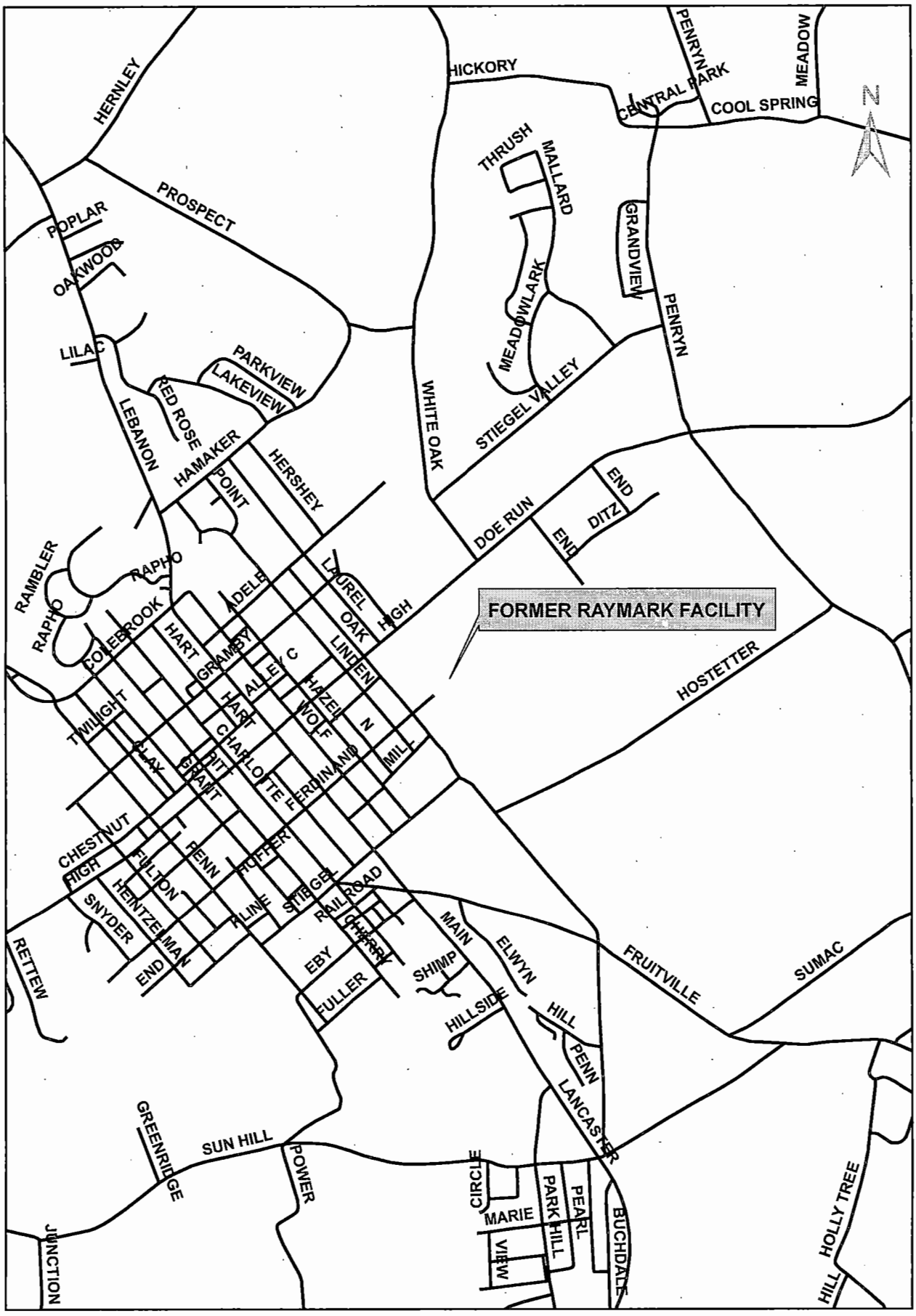
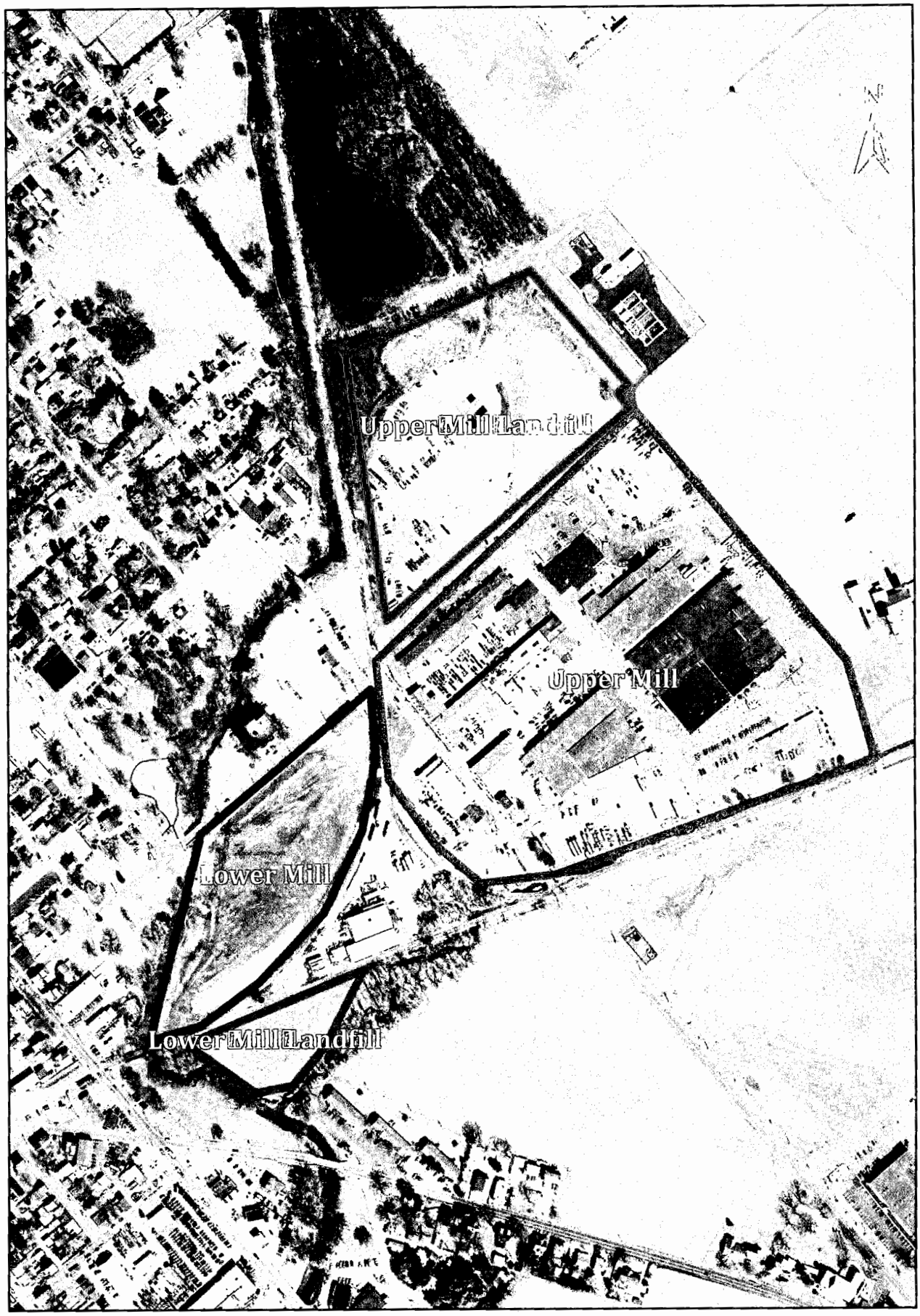


Figure 1
Site Location Map

Former Raymark Facility



0 0.045 0.09 0.18 Miles

Figure 2

Former Raymark Facility

Figure 3

TABLE

Table 1
Former Raymark Landfill
June 20, 2014 Groundwater Sampling Comparison Table

Location ID	DEPTH TO WATER LEVEL (FT)	GROUND WATER ELEVATION (FT)	ALKALINITY (mg/l)	AMMONIA-NITROGEN (MG/L)	ARSENIC; DISSOLVED (UG/L)	ARSENIC; TOTAL (UG/L)	BARIUM; DISSOLVED (UG/L)	BARIUM; TOTAL (UG/L)	CADMIUM; DISSOLVED (UG/L)	CADMIUM; TOTAL (UG/L)	CALCIUM; DISSOLVED (MG/L)	CALCIUM; TOTAL (MG/L)	CHLORIDE (MG/L)	CHROMIUM; DISSOLVED (UG/L)	CHROMIUM; TOTAL (UG/L)	COPPER; DISSOLVED (UG/L)	COPPER; TOTAL (UG/L)	FLUORIDE (MG/L)	IRON; DISSOLVED (UG/L)	IRON; TOTAL (UG/L)	LEAD; DISSOLVED (mg/l)	LEAD; TOTAL (mg/l)
W-4 DEP			305.8	0.02 <	3 <	3 <	51	51	0.2 <	0.2 <	111.279	107.479	35.2	4 <	4 <	10 <	10 <	0.2 <	20 <	903	0.001 <	0.001 <
W-4	5.22	392.5	315																		0.006 ND	0.0067 ND
W-6 DEP			348.2	0.05	3 <	3 <	10 <	10 <	2.28	2.21	145.5	142	7.9	4 <	4 <	10 <	10 <	0.25	21	122	0.001 <	0.001 <
W-6	11.11	390.52	324																		0.006 ND	0.0067 ND
W-9 DEP			202.2	0.02 <	3 <	3 <	38	40	0.2 <	0.2 <	87.255	87.028	46.5	4 <	4 <	10 <	10 <	0.2 <	20 <	123	0.001 <	0.001 <
W-9	6.72	393.34	197																		0.006 ND	0.0067 ND
W-10A DEP			816	0.46	3 <	3 <	98	101	1.39	1.57	119.748	118.132	11	4 <	4 <	173	281	1.64	3022	5314	0.00436	0.153
W-10A	7.11	391.73	764																		0.0061	0.15
W-19 DEP			574.8	0.25	3 <	3 <	71	72	0.214	0.214	168.249	168.557	5.5	4 <	4 <	47	47	1.83	20 <	26	0.00701	0.00791
W-19	9.49	393.47	610																		0.0078	0.011

Table 1
Former Raymark Landfill
June 20, 2014 Groundwater Sampling Comparison Table

MAGNESIUM; DISSOLVED (MG/L)	MAGNESIUM; TOTAL (MG/L)	MANGANESE; DISSOLVED (UG/L)	MANGANESE; TOTAL (UG/L)	NITRATE-NITROGEN (MG/L)	PH-FIELD (SU)	PH-LAB (SU)	POTASSIUM; DISSOLVED (MG/L)	POTASSIUM; TOTAL (MG/L)	SODIUM; DISSOLVED (MG/L)	SODIUM; TOTAL (MG/L)	SPECIFIC CONDUCTANCE, FIELD (umhos/cm)	SPECIFIC CONDUCTANCE,LAB (umhos/cm)	SULFATE (MG/L)	TEMP_ BEFORE SAMPLING (deg_C)	TOTAL ORGANIC CARBON, TOC (MG/L)	TURBIDITY (NTU)	ZINC; DISSOLVED (UG/L)	ZINC; TOTAL (UG/L)
27.742	26.705	35	40	13.78		7.6	3.951	3.969	29.511	27.801		832	50.9		1.07	1 <	10 <	17
					6.89						788			13.3				
155	153.5	136	144	0.81		7.7	9.554	9.526	7.836	7.606		1600	644.6		1.35	1 <	2401	2331
					7.03						1237			14.2				
13.23	13.309	10 <	10 <	4.78		7.8	2.016	2.059	21.367	21.723		615	42.6		0.88	1 <	10 <	10 <
					7.01						593			13.6				
141	136	880	853	0.12		7.4	8.862	8.754	18.713	18.325		1534	155.5		5.8	48.94	6941	7207
					6.79						1502			15.4				
76.554	75.664	456	448	1.76		7.3	5.082	5.075	19.364	19.508		1273	169.3		4.31	1 <	261	259
					6.67						1215			14.6				

APPENDIX A

Date of Issue: 07/07/2017 04:11:34

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Land Recycling & Waste Management

Sample ID: 0486 117 **Date Collected:** 06/08/2017 11:20:00 AM **Lab Sample ID:** I2017015621 **Status:** Completed

Name of Sample Collector: Serena L Oldhouser
Date Received: 06/09/2017

County: Lancaster **State:**
Municipality: Manheim Boro

WILLIAM MCMICHAEL
220 ROSEDALE AVENUE, SUITE 143
BAUSEMAN PA. 17504

MP ID: MW-4 68680 **MP Type:** Monitoring Well
MP Location Description: MW-4

Alias ID	Project / Facility
MW-4	PAD0030153

Sample Medium: Ground Water
Sample Medium Type: Water

Location: NOT INDICATED
Reason: Routine Sampling
Project: PAD003015328 Raymark Industries Upper Mill Landfill
Standard Anlysis: 208
Matrix: Water

Stream Condition:

Sample ID: 0486 117 **Date Collected:** 06/08/2017 11:20:00 AM **Lab Sample ID:** I2017015621 **Status:** Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY REPORTED @ pH 4.5	305.8 MG/L	06/09/2017 05:11 PM	MTUZINSKI	SM 2320B
00610A AMMONIA TOTAL AS NITROGEN	<.02 MG/L	06/27/2017 11:26 PM	CRADEK	EPA 350.1
01000H ARSENIC, DISSOLVED (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
00978H ARSENIC, RECOVERABLE (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
01005A BARIUM, DISSOLVED (WATER & WASTE) BY ICP	51.000 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01009A BARIUM, RECOVERABLE (WATER & WASTE) BY ICP	51.000 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01025H CADMIUM, DISSOLVED (WATER & WASTE) BY ICPMS	<.20 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
01113H CADMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<.2 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
00915A CALCIUM, DISSOLVED (WATER & WASTE) BY ICP	111.279 MG/L	06/19/2017 10:25 AM	CREITMEYER	EPA 200.7
00918A CALCIUM, RECOVERABLE (WATER & WASTE) BY ICP	107.479 MG/L	06/19/2017 10:25 AM	CREITMEYER	EPA 200.7
01030H CHROMIUM, DISSOLVED (WATER&WASTE) BY ICPMS	<4 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
01118H CHROMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<4.0 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
01040A COPPER, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01119A COPPER, RECOVERABLE (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01046A IRON, DISSOLVED (WATER & WASTE) BY ICP	<20 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
00980A IRON, RECOVERABLE (WATERS & WASTE) BY ICP	903.000 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01114H LEAD TOTAL RECOVERABLE (WATER & WASTE) BY ICPMS	<1.0 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
01049H LEAD, DISSOLVED (WATER & WASTE) BY ICPMS	<1.0 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
00925A MAGNESIUM, DISSOLVED (WATER & WASTE) BY ICP	27.742 MG/L	06/19/2017 10:25 AM	CREITMEYER	EPA 200.7
00921A MAGNESIUM, RECOVERABLE (WATER & WASTE) BY ICP	26.705 MG/L	06/19/2017 10:25 AM	CREITMEYER	EPA 200.7
01056A MANGANESE, DISSOLVED (WATER & WASTE) BY ICP	35.000 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01123A MANGANESE, RECOVERABLE (WATER & WASTE) BY ICP	40.000 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
71890X MERCURY, DISSOLVED	<1 UG/L	06/15/2017 02:17 PM	FHUNZIKER	EPA 245.1
71901X MERCURY, RECOVERABLE	<1 UG/L	06/15/2017 02:15 PM	FHUNZIKER	EPA 245.1
00403 pH, Lab (Electrometric)	7.6 pH units	06/09/2017 05:11 PM	MTUZINSKI	SM 4500H-B
** Comment ** Holding Time Exceeded				
00935A POTASSIUM, DISSOLVED WATER & WASTE) BY ICP	3.951 MG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
00939A POTASSIUM, RECOVERBLE (WATER & WASTE) BY ICP *	3.969 MG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01145H SELENIUM, DISSOLVED (WATER &WASTE) BY ICPMS	<7 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
00981H SELENIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<7 UG/L	06/12/2017 10:49 AM	JOWERNER	EPA 200.8
01075A SILVER, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01079A SILVER, RECOVERABLE (WATER &WASTE) BY ICP	<10 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
00930A SODIUM, DISSOLVED (WATER & WASTE) BY ICP	29.511 MG/L	06/19/2017 10:25 AM	CREITMEYER	EPA 200.7
00923A SODIUM, RECOVERABLE (WATER & WASTE) BY ICP	27.801 MG/L	06/19/2017 10:25 AM	CREITMEYER	EPA 200.7

Sample ID: 0486 117 **Date Collected:** 06/08/2017 11:20:00 AM **Lab Sample ID:** I2017015621 **Status:** Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	832.00 umhos/cm	06/13/2017 01:11 PM	MTUZINSKI	SM 2510B
00403T Temperature at which pH is measured	17.26 C	06/09/2017 05:11 PM	MTUZINSKI	SM 4500H-B
00940A Total Chloride-Colorimetric	35.2 MG/L	06/23/2017 08:39 PM	CRADEK	SM 4500-CL E
00951 Total Fluoride-Ion Chromatograph	<0.20 MG/L	06/09/2017 02:45 PM	FVODOPIVEC	EPA 300.0
00620A Total Nitrate Nitrogen-Colorimetric	13.78 MG/L	06/09/2017 12:14 PM	TBEAR	EPA 353.2
00680 Total Organic Carbon	1.07 MG/L	06/16/2017 02:24 PM	MAMCNULTY	SM 5310 C
00945A Total Sulfate-Colorimetric	50.9 MG/L	06/28/2017 11:18 PM	BLAZESERVICE	EPA 375.2
82079 TURBIDITY, NEPHELMETRIC	<1 NTU	06/09/2017 11:36 AM	SAGREER	EPA 180.1
01090A ZINC, DISSOLVED (WATER & WASTE) BY ICP	<10.0 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7
01094A ZINC, RECOVERABLE (WATER & WASTE) ICP	17.000 UG/L	06/16/2017 10:25 AM	CREITMEYER	EPA 200.7

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2009 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.
* denotes tests that the laboratory is not accredited for

Taru Upadhyay, Technical Director, Bureau of Laboratories

Date of Issue: 07/07/2017 04:11:46

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Land Recycling & Waste Management

Sample ID: 0486 120 **Date Collected:** 06/08/2017 01:01:00 PM **Lab Sample ID:** I2017015624 **Status:** Completed

Name of Sample Collector: Serena L Oldhouser
Date Received: 06/09/2017

County: Lancaster **State:**
Municipality: Manheim Boro

WILLIAM MCMICHAEL
220 ROSEDALE AVE
SUITE 143
BAUSEMAN PA. 17504

MP ID: MW-6 68681 **MP Type:** Monitoring Well
MP Location Description: MW-6

* Alias ID	Project / Facility
MW-6	PAD0030153

Sample Medium: Ground Water
Sample Medium Type: Water

Location: NOT INDICATED
Reason: Routine Sampling
Project: PAD003015328 Raymark Industries Upper Mill Landfill
Standard Anlysis: 208
Matrix: Water

Sample ID: 0486 120 **Date Collected:** 06/08/2017 01:01:00 PM **Lab Sample ID:** I2017015624 **Status:** Completed

Stream Condition:

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY REPORTED @ pH 4.5	348.2 MG/L	06/09/2017 05:52 PM	MTUZINSKI	SM 2320B
00610A AMMONIA TOTAL AS NITROGEN	0.05 MG/L	06/27/2017 11:31 PM	CRADEK	EPA 350.1
01000H ARSENIC, DISSOLVED (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
00978H ARSENIC, RECOVERABLE (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
01005A BARIUM, DISSOLVED (WATER & WASTE) BY ICP	<10.0 UG/L	06/23/2017 10:47 AM	CREITMEYER	EPA 200.7
01009A BARIUM, RECOVERABLE (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
01025H CADMIUM, DISSOLVED (WATER & WASTE) BY ICPMS	2.280 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
01113H CADMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	2.210 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
00915A CALCIUM, DISSOLVED (WATER & WASTE) BY ICP	145.500 MG/L	06/19/2017 10:47 AM	CREITMEYER	EPA 200.7
00918A CALCIUM, RECOVERABLE (WATER & WASTE) BY ICP	142.000 MG/L	06/19/2017 10:47 AM	CREITMEYER	EPA 200.7
01030H CHROMIUM, DISSOLVED (WATER&WASTE) BY ICPMS	<4 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
01118H CHROMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<4.0 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
01040A COPPER, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
01119A COPPER, RECOVERABLE (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
01046A IRON, DISSOLVED (WATER & WASTE) BY ICP	21.000 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
00980A IRON, RECOVERABLE (WATERS & WASTE) BY ICP	122.000 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
01114H LEAD TOTAL RECOVERABLE (WATER & WASTE) BY ICPMS	<1.0 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
01049H LEAD, DISSOLVED (WATER & WASTE) BY ICPMS	<1.0 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
00925A MAGNESIUM, DISSOLVED (WATER & WASTE) BY ICP	155.000 MG/L	06/19/2017 10:47 AM	CREITMEYER	EPA 200.7
00921A MAGNESIUM, RECOVERABLE (WATER & WASTE) BY ICP	153.500 MG/L	06/19/2017 10:47 AM	CREITMEYER	EPA 200.7
01056A MANGANESE, DISSOLVED (WATER & WASTE) BY ICP	136.000 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
01123A MANGANESE, RECOVERABLE (WATER & WASTE) BY ICP	144.000 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
71890X MERCURY, DISSOLVED	<1 UG/L	06/15/2017 02:36 PM	FHUNZIKER	EPA 245.1
71901X MERCURY, RECOVERABLE	<1 UG/L	06/15/2017 02:34 PM	FHUNZIKER	EPA 245.1
00403 pH, Lab (Electrometric)	7.7 pH units	06/09/2017 05:52 PM	MTUZINSKI	SM 4500H-B
** Comment ** Holding Time Exceeded				
00935A POTASSIUM, DISSOLVED WATER & WASTE) BY ICP	9.554 MG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
00939A POTASSIUM, RECOVERBLE (WATER & WASTE) BY ICP *	9.526 MG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
01145H SELENIUM, DISSOLVED (WATER &WASTE) BY ICPMS	<7 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
00981H SELENIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<7 UG/L	06/12/2017 11:29 AM	JOWERNER	EPA 200.8
01075A SILVER, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
01079A SILVER, RECOVERABLE (WATER &WASTE) BY ICP	<10 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7

Sample ID: 0486 120 **Date Collected:** 06/08/2017 01:01:00 PM **Lab Sample ID:** I2017015624 **Status:** Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00930A SODIUM, DISSOLVED (WATER & WASTE) BY ICP	7.836 MG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
00923A SODIUM, RECOVERABLE (WATER & WASTE) BY ICP	7.606 MG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	1600.00 umhos/cm	06/13/2017 01:16 PM	MTUZINSKI	SM 2510B
00403T Temperature at which pH is measured	17.42 C	06/09/2017 05:52 PM	MTUZINSKI	SM 4500H-B
00940A Total Chloride-Colorimetric	7.9 MG/L	06/23/2017 08:43 PM	CRADEK	SM 4500-CL E
00951 Total Fluoride-Ion Chromatograph	0.25 MG/L	06/09/2017 03:28 PM	FVODOPIVEC	EPA 300.0
00620A Total Nitrate Nitrogen-Colorimetric	0.81 MG/L	06/09/2017 10:34 AM	TBEAR	EPA 353.2
00680 Total Organic Carbon	1.35 MG/L	06/16/2017 03:32 PM	MAMCNULTY	SM 5310 C
00945A Total Sulfate-Colorimetric	644.6 MG/L	06/29/2017 01:44 AM	BLAZESERVICE	EPA 375.2
82079 TURBIDITY, NEPHELMETRIC	<1.00 NTU	06/09/2017 11:56 AM	SAGREER	EPA 180.1
01090A ZINC, DISSOLVED (WATER & WASTE) BY ICP	2401.000 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7
01094A ZINC, RECOVERABLE (WATER & WASTE) ICP	2331.000 UG/L	06/16/2017 10:47 AM	CREITMEYER	EPA 200.7

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2009 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.
* denotes tests that the laboratory is not accredited for

Taru Upadhyay, Technical Director, Bureau of Laboratories

Date of Issue: 07/07/2017 04:06:02

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Land Recycling & Waste Management

Sample ID: 0486 116 **Date Collected:** 06/08/2017 10:00:00 AM **Lab Sample ID:** I2017015620 **Status:** Completed

Name of Sample Collector: Serena L Oldhouser
Date Received: 06/09/2017

County: Lancaster **State:**
Municipality: Manheim Boro

WILLIAM MCMICHAEL
220 ROSEDALE AVE
SUITE 143
BAUSEMAN PA. 17504

MP ID: MW-9 68683 **MP Type:** Monitoring Well
MP Location Description: MW-9

Alias ID	Project / Facility
MW-9	PAD0030153

Sample Medium: Ground Water
Sample Medium Type: Water

Location: NOT INDICATED
Reason: Routine Sampling
Project: PAD003015328 Raymark Industries Upper Mill Landfill
Standard Anlysis: 208
Matrix: Water

Sample ID: 0486 116 **Date Collected:** 06/08/2017 10:00:00 AM **Lab Sample ID:** I2017015620 **Status:** Completed

Stream Condition:

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY REPORTED @ pH 4.5	202.2 MG/L	06/09/2017 05:03 PM	MTUZINSKI	SM 2320B
00610A AMMONIA TOTAL AS NITROGEN	<.02 MG/L	06/27/2017 11:12 PM	CRADEK	EPA 350.1
01000H ARSENIC, DISSOLVED (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
00978H ARSENIC, RECOVERABLE (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
01005A BARIUM, DISSOLVED (WATER & WASTE) BY ICP	38.000 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01009A BARIUM, RECOVERABLE (WATER & WASTE) BY ICP	40.000 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01025H CADMIUM, DISSOLVED (WATER & WASTE) BY ICPMS	<.20 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
01113H CADMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<.2 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
00915A CALCIUM, DISSOLVED (WATER & WASTE) BY ICP	87.255 MG/L	06/19/2017 10:11 AM	CREITMEYER	EPA 200.7
00918A CALCIUM, RECOVERABLE (WATER & WASTE) BY ICP	87.028 MG/L	06/19/2017 10:11 AM	CREITMEYER	EPA 200.7
01030H CHROMIUM, DISSOLVED (WATER&WASTE) BY ICPMS	<4 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
01118H CHROMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<4.0 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
01040A COPPER, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01119A COPPER, RECOVERABLE (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01046A IRON, DISSOLVED (WATER & WASTE) BY ICP	<20 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
00980A IRON, RECOVERABLE (WATERS & WASTE) BY ICP	123.000 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01114H LEAD TOTAL RECOVERABLE (WATER & WASTE) BY ICPMS	<1.0 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
01049H LEAD, DISSOLVED (WATER & WASTE) BY ICPMS	<1.0 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
00925A MAGNESIUM, DISSOLVED (WATER & WASTE) BY ICP	13.230 MG/L	06/19/2017 10:11 AM	CREITMEYER	EPA 200.7
00921A MAGNESIUM, RECOVERABLE (WATER & WASTE) BY ICP	13.309 MG/L	06/19/2017 10:11 AM	CREITMEYER	EPA 200.7
01056A MANGANESE, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01123A MANGANESE, RECOVERABLE (WATER & WASTE) BY ICP	<10.00 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
71890X MERCURY, DISSOLVED	<1 UG/L	06/15/2017 02:13 PM	FHUNZIKER	EPA 245.1
71901X MERCURY, RECOVERABLE	<1 UG/L	06/15/2017 02:11 PM	FHUNZIKER	EPA 245.1
00403 pH, Lab (Electrometric)	7.8 pH units	06/09/2017 05:03 PM	MTUZINSKI	SM 4500H-B
** Comment ** Holding Time Exceeded				
00935A POTASSIUM, DISSOLVED WATER & WASTE) BY ICP	2.016 MG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
00939A POTASSIUM, RECOVERBLE (WATER & WASTE) BY ICP *	2.059 MG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01145H SELENIUM, DISSOLVED (WATER &WASTE) BY ICPMS	<7 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
00981H SELENIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<7 UG/L	06/12/2017 10:35 AM	JOWERNER	EPA 200.8
01075A SILVER, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01079A SILVER, RECOVERABLE (WATER &WASTE) BY ICP	<10 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7

Sample ID: 0486 116 **Date Collected:** 06/08/2017 10:00:00 AM **Lab Sample ID:** I2017015620 **Status:** Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00930A SODIUM, DISSOLVED (WATER & WASTE) BY ICP	21.367 MG/L	06/19/2017 10:11 AM	CREITMEYER	EPA 200.7
00923A SODIUM, RECOVERABLE (WATER & WASTE) BY ICP	21.723 MG/L	06/19/2017 10:11 AM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	615.00 umhos/cm	06/13/2017 01:07 PM	MTUZINSKI	SM 2510B
00403T Temperature at which pH is measured	17.11 C	06/09/2017 05:03 PM	MTUZINSKI	SM 4500H-B
00940A Total Chloride-Colorimetric	46.5 MG/L	06/23/2017 08:27 PM	CRADEK	SM 4500-CL E
00951 Total Fluoride-Ion Chromatograph	<0.20 MG/L	06/09/2017 02:31 PM	FVODOPIVEC	EPA 300.0
00620A Total Nitrate Nitrogen-Colorimetric	4.78 MG/L	06/09/2017 10:27 AM	TBEAR	EPA 353.2
00680 Total Organic Carbon	0.88 MG/L	06/16/2017 01:57 PM	MAMCNULTY	SM 5310 C
00945A Total Sulfate-Colorimetric	42.6 MG/L	06/29/2017 06:46 PM	LHREHA	EPA 375.2
82079 TURBIDITY, NEPHELMETRIC	<1 NTU	06/09/2017 11:28 AM	SAGREER	EPA 180.1
01090A ZINC, DISSOLVED (WATER & WASTE) BY ICP	<10.0 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7
01094A ZINC, RECOVERABLE (WATER & WASTE) ICP	<10.0 UG/L	06/16/2017 10:11 AM	CREITMEYER	EPA 200.7

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2009 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.
* denotes tests that the laboratory is not accredited for

Taru Upadhyay, Technical Director, Bureau of Laboratories

Date of Issue: 07/07/2017 04:15:47

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Land Recycling & Waste Management

Sample ID: 0486 119 **Date Collected:** 06/08/2017 12:27:00 PM **Lab Sample ID:** I2017015623 **Status:** Completed

Name of Sample Collector: Serena L Oldhouser
Date Received: 06/09/2017

County: Lancaster **State:**
Municipality: Manheim Boro

MP ID: MW-10A 68666 **MP Type:** Monitoring Well
MP Location Description: Well MW-10A

Alias ID	Project / Facility
MW-10A	PAD0030153

Sample Medium: Ground Water
Sample Medium Type: Water

Location: NOT INDICATED
Reason: Routine Sampling
Project: PAD003015328 Raymark Industries Upper Mill Landfill
Standard Anlysis: 208
Matrix: Water

Stream Condition:

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY REPORTED @ pH 4.5	816.0 MG/L	06/09/2017 05:42 PM	MTUZINSKI	SM 2320B

Sample ID: 0486 119 **Date Collected:** 06/08/2017 12:27:00 PM **Lab Sample ID:** I2017015623 **Status:** Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00610A AMMONIA TOTAL AS NITROGEN	0.46 MG/L	06/27/2017 11:29 PM	CRADEK	EPA 350.1
01000H ARSENIC, DISSOLVED (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
00978H ARSENIC, RECOVERABLE (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
01005A BARIUM, DISSOLVED (WATER & WASTE) BY ICP	98.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01009A BARIUM, RECOVERABLE (WATER & WASTE) BY ICP	101.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01025H CADMIUM, DISSOLVED (WATER & WASTE) BY ICPMS	1.390 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
01113H CADMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	1.570 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
00915A CALCIUM, DISSOLVED (WATER & WASTE) BY ICP	119.748 MG/L	06/19/2017 10:42 AM	CREITMEYER	EPA 200.7
00918A CALCIUM, RECOVERABLE (WATER & WASTE) BY ICP	118.132 MG/L	06/19/2017 10:42 AM	CREITMEYER	EPA 200.7
01030H CHROMIUM, DISSOLVED (WATER&WASTE) BY ICPMS	<4 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
01118H CHROMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<4.0 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
01040A COPPER, DISSOLVED (WATER & WASTE) BY ICP	173.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01119A COPPER, RECOVERABLE (WATER & WASTE) BY ICP	281.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01046A IRON, DISSOLVED (WATER & WASTE) BY ICP	3022.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
00980A IRON, RECOVERABLE (WATERS & WASTE) BY ICP	5314.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01114H LEAD TOTAL RECOVERABLE (WATER & WASTE) BY ICPMS	153.000 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
01049H LEAD, DISSOLVED (WATER & WASTE) BY ICPMS	4.360 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
00925A MAGNESIUM, DISSOLVED (WATER & WASTE) BY ICP	141.000 MG/L	06/19/2017 10:42 AM	CREITMEYER	EPA 200.7
00921A MAGNESIUM, RECOVERABLE (WATER & WASTE) BY ICP	136.000 MG/L	06/19/2017 10:42 AM	CREITMEYER	EPA 200.7
01056A MANGANESE, DISSOLVED (WATER & WASTE) BY ICP	880.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01123A MANGANESE, RECOVERABLE (WATER & WASTE) BY ICP	853.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
71890X MERCURY, DISSOLVED	<1 UG/L	06/15/2017 02:32 PM	FHUNZIKER	EPA 245.1
71901X MERCURY, RECOVERABLE	<1 UG/L	06/15/2017 02:30 PM	FHUNZIKER	EPA 245.1
00403 pH, Lab (Electrometric)	7.4 pH units	06/09/2017 05:42 PM	MTUZINSKI	SM 4500H-B
** Comment ** Holding Time Exceeded				
00935A POTASSIUM, DISSOLVED WATER & WASTE) BY ICP	8.862 MG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
00939A POTASSIUM, RECOVERBLE (WATER & WASTE) BY ICP *	8.754 MG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01145H SELENIUM, DISSOLVED (WATER &WASTE) BY ICPMS	<7 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
00981H SELENIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<7 UG/L	06/12/2017 11:02 AM	JOWERNER	EPA 200.8
01075A SILVER, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01079A SILVER, RECOVERABLE (WATER &WASTE) BY ICP	<10 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
00930A SODIUM, DISSOLVED (WATER & WASTE) BY ICP	18.713 MG/L	06/19/2017 10:42 AM	CREITMEYER	EPA 200.7
00923A SODIUM, RECOVERABLE (WATER & WASTE) BY ICP	18.325 MG/L	06/19/2017 10:42 AM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	1534.00 umhos/cm	06/13/2017 01:14 PM	MTUZINSKI	SM 2510B
00403T Temperature at which pH is measured	17.37 C	06/09/2017 05:42 PM	MTUZINSKI	SM 4500H-B

Sample ID: 0486 119 **Date Collected:** 06/08/2017 12:27:00 PM **Lab Sample ID:** I2017015623 **Status:** Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00940A Total Chloride-Colorimetric	11.0 MG/L	06/23/2017 08:42 PM	CRADEK	SM 4500-CL E
00951 Total Fluoride-Ion Chromatograph	1.64 MG/L	06/09/2017 03:14 PM	FVODOPIVEC	EPA 300.0
00620A Total Nitrate Nitrogen-Colorimetric	0.12 MG/L	06/09/2017 11:39 AM	TBEAR	EPA 353.2
00680 Total Organic Carbon	5.80 MG/L	06/16/2017 03:00 PM	MAMCNULTY	SM 5310 C
00945A Total Sulfate-Colorimetric	155.5 MG/L	06/28/2017 11:22 PM	BLAZESERVICE	EPA 375.2
82079 TURBIDITY, NEPHELMETRIC	48.94 NTU	06/09/2017 11:48 AM	SAGREER	EPA 180.1
01090A ZINC, DISSOLVED (WATER & WASTE) BY ICP	6941.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7
01094A ZINC, RECOVERABLE (WATER & WASTE) ICP	7207.000 UG/L	06/16/2017 10:42 AM	CREITMEYER	EPA 200.7

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2009 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.
* denotes tests that the laboratory is not accredited for

Taru Upadhyay, Technical Director, Bureau of Laboratories

Date of Issue: 07/07/2017 04:15:42

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Land Recycling & Waste Management

Sample ID: 0486 118 **Date Collected:** 06/08/2017 11:56:00 AM **Lab Sample ID:** I2017015622 **Status:** Completed

Name of Sample Collector: Serena L Oldhouser
Date Received: 06/09/2017

County: Lancaster **State:**
Municipality: Manheim Boro

WILLIAM MCMICHAEL
220 ROSEDALE AVE
BAUSEMAN PA. 17504

MP ID: MW-19 68675 **MP Type:** Monitoring Well
MP Location Description: MW-19

Alias ID	Project / Facility
MW-19	PAD0030153

Sample Medium: Ground Water
Sample Medium Type: Water

Location: NOT INDICATED
Reason: Routine Sampling
Project: PAD003015328 Raymark Industries Upper Mill Landfill
Standard Anlysis: 208
Matrix: Water

Stream Condition:

Sample ID: 0486 118 **Date Collected:** 06/08/2017 11:56:00 AM **Lab Sample ID:** I2017015622 **Status:** Completed

est Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
0410 ALKALINITY REPORTED @ pH 4.5	574.8 MG/L	06/09/2017 05:25 PM	MTUZINSKI	SM 2320B
0610A AMMONIA TOTAL AS NITROGEN	0.25 MG/L	06/27/2017 11:27 PM	CRADEK	EPA 350.1
01000H ARSENIC, DISSOLVED (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
00978H ARSENIC, RECOVERABLE (WATER & WASTE) BY ICPMS	<3.0 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
01005A BARIUM, DISSOLVED (WATER & WASTE) BY ICP	71.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01009A BARIUM, RECOVERABLE (WATER & WASTE) BY ICP	72.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01025H CADMIUM, DISSOLVED (WATER & WASTE) BY ICPMS	0.214 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
01113H CADMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	0.214 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
00915A CALCIUM, DISSOLVED (WATER & WASTE) BY ICP	168.249 MG/L	06/19/2017 10:36 AM	CREITMEYER	EPA 200.7
00918A CALCIUM, RECOVERABLE (WATER & WASTE) BY ICP	168.557 MG/L	06/19/2017 10:36 AM	CREITMEYER	EPA 200.7
01030H CHROMIUM, DISSOLVED (WATER&WASTE) BY ICPMS	<4 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
01118H CHROMIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<4.0 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
01040A COPPER, DISSOLVED (WATER & WASTE) BY ICP	47.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01119A COPPER, RECOVERABLE (WATER & WASTE) BY ICP	47.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01046A IRON, DISSOLVED (WATER & WASTE) BY ICP	<20 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
00980A IRON, RECOVERABLE (WATERS & WASTE) BY ICP	26.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01114H LEAD TOTAL RECOVERABLE (WATER & WASTE) BY ICPMS	7.910 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
01049H LEAD, DISSOLVED (WATER & WASTE) BY ICPMS	7.010 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
00925A MAGNESIUM, DISSOLVED (WATER & WASTE) BY ICP	76.554 MG/L	06/19/2017 10:36 AM	CREITMEYER	EPA 200.7
00921A MAGNESIUM, RECOVERABLE (WATER & WASTE) BY ICP	75.664 MG/L	06/19/2017 10:36 AM	CREITMEYER	EPA 200.7
01056A MANGANESE, DISSOLVED (WATER & WASTE) BY ICP	456.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01123A MANGANESE, RECOVERABLE (WATER & WASTE) BY ICP	448.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
71890X MERCURY, DISSOLVED	<1 UG/L	04/15/2017 02:26 PM	FHUNZIKER	EPA 245.1
71901X MERCURY, RECOVERABLE	<1 UG/L	04/15/2017 02:19 PM	FHUNZIKER	EPA 245.1
00403 pH, Lab (Electrometric)	7.3 pH units	06/09/2017 05:25 PM	MTUZINSKI	SM 4500H-B
** Comment ** Holding Time Exceeded				
00935A POTASSIUM, DISSOLVED WATER & WASTE) BY ICP	5.082 MG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
00939A POTASSIUM, RECOVERBLE (WATER & WASTE) BY ICP *	5.075 MG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01145H SELENIUM, DISSOLVED (WATER &WASTE) BY ICPMS	<7 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
00981H SELENIUM, RECOVERABLE (WATER & WASTE) BY ICPMS	<7 UG/L	06/12/2017 10:55 AM	JOWERNER	EPA 200.8
01075A SILVER, DISSOLVED (WATER & WASTE) BY ICP	<10 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01079A SILVER, RECOVERABLE (WATER &WASTE) BY ICP	<10 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
00930A SODIUM, DISSOLVED (WATER & WASTE) BY ICP	19.364 MG/L	06/19/2017 10:36 AM	CREITMEYER	EPA 200.7
00923A SODIUM, RECOVERABLE (WATER & WASTE) BY ICP	19.508 MG/L	06/19/2017 10:36 AM	CREITMEYER	EPA 200.7

Sample ID: 0486 118 **Date Collected:** 06/08/2017 11:56:00 AM **Lab Sample ID:** I2017015622 **Status:** Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	1273.00 umhos/cm	06/13/2017 01:13 PM	MTUZINSKI	SM 2510B
00403T Temperature at which pH is measured	17.32 C	06/09/2017 05:25 PM	MTUZINSKI	SM 4500H-B
00940A Total Chloride-Colorimetric	5.5 MG/L	06/23/2017 08:40 PM	CRADEK	SM 4500-CL E
00951 Total Fluoride-Ion Chromatograph	1.83 MG/L	06/09/2017 03:00 PM	FVODOPIVEC	EPA 300.0
00620A Total Nitrate Nitrogen-Colorimetric	1.76 MG/L	06/09/2017 12:07 PM	TBEAR	EPA 353.2
00680 Total Organic Carbon	4.31 MG/L	06/16/2017 02:40 PM	MAMCNULTY	SM 5310 C
00945A Total Sulfate-Colorimetric	169.3 MG/L	06/28/2017 11:20 PM	BLAZESERVICE	EPA 375.2
82079 TURBIDITY, NEPHELMETRIC	<1 NTU	06/09/2017 11:43 AM	SAGREER	EPA 180.1
01090A ZINC, DISSOLVED (WATER & WASTE) BY ICP	261.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7
01094A ZINC, RECOVERABLE (WATER & WASTE) ICP	259.000 UG/L	06/16/2017 10:36 AM	CREITMEYER	EPA 200.7

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2009 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.
* denotes tests that the laboratory is not accredited for

Taru Upadhyay, Technical Director, Bureau of Laboratories

APPENDIX B

ALS Environmental

Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

June 26, 2017

Mr. Herm Ramig
Lot 5 Associates LLC
210 Hostetter Road
Manheim, PA 17545

Certificate of Analysis

roject Name:	**Manheim Upper Mill Landfill**	Workorder:	**2236743**
urchase Order:		Workorder ID:	**Manheim Auto Semi Annual**

ear Mr. Ramig:

Enclosed are the analytical results for samples received by the laboratory on Thursday, June 8, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Shannon Butler (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

page is included as part of the Analytical Report and
be retained as a permanent record thereof.

Shannon Butler
Ms. Shannon Butler
Project Coordinator

ALS Environmental

logwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

orkorder: 2236743 Manheim Auto Semi Annual

ıb ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
236743001	W-9	Ground Water	6/8/2017 09:56	6/8/2017 13:46	Mr. Brian G Shade
236743002	W-4	Ground Water	6/8/2017 11:21	6/8/2017 13:46	Mr. Brian G Shade
236743003	W-19	Ground Water	6/8/2017 11:56	6/8/2017 13:46	Mr. Brian G Shade
236743004	W-10A	Ground Water	6/8/2017 12:27	6/8/2017 13:46	Mr. Brian G Shade
236743005	W-6	Ground Water	6/8/2017 13:01	6/8/2017 13:46	Mr. Brian G Shade

ALS Environmental

Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2236743 Manheim Auto Semi Annual

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

tandard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
gLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
Rec	Percent Recovery
RPD	Relative Percent Difference
DOD	DoD Limit of Detection
DOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
S)	Surrogate Compound
C	Not Calculated
	Result outside of QC limits

ALS Environmental

Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2236743 Manheim Auto Semi Annual

Lab ID: **2236743001** Date Collected: 6/8/2017 09:56 Matrix: Ground Water

Sample ID: **W-9** Date Received: 6/8/2017 13:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Alkalinity, Total	197	1	mg/L	5	S2320B-97			6/9/17 13:38	MSA	A
METALS										
Lead, Total	ND		mg/L	0.0067	SW846 6010C	6/12/17 05:45	LXC	6/12/17 14:02	SRT	B1
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	6/12/17 07:16	SRT	6/19/17 04:00	SRT	C
FIELD PARAMETERS										
Depth to Water Level	6.720		Feet		Field			6/8/17 09:56	BGS	D
Flow Rate	1.69		gal/min		Field			6/8/17 09:56	BGS	D
pH, Field (SM4500B)	7.010		pH_Units		Field			6/8/17 09:56	BGS	D
Sample Depth	10.000		Feet		Field			6/8/17 09:56	BGS	D
Specific Conductance, Field	593		umhos/cm	1	Field			6/8/17 09:56	BGS	D
Temperature	13.60		Deg. C		Field			6/8/17 09:56	BGS	D
Total Well Depth	16.700		Feet		Field			6/8/17 09:56	BGS	D
Volume in Water Column	6.487		Gallons		Field			6/8/17 09:56	BGS	D
Water Level After Purge	6.750		Feet		Field			6/8/17 09:56	BGS	D
Well Volumes Purged	3.13		Vol		Field			6/8/17 09:56	BGS	D

Shannon Butler

Ms. Shannon Butler
Project Coordinator

ALS Environmental

Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2236743 Manheim Auto Semi Annual

Lab ID: **2236743002** Date Collected: 6/8/2017 11:21 Matrix: Ground Water

Sample ID: **W-4** Date Received: 6/8/2017 13:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Alkalinity, Total	315	1	mg/L	5	S2320B-97			6/9/17 13:50	MSA	A
METALS										
Lead, Total	ND		mg/L	0.0067	SW846 6010C	6/12/17 05:45	LXC	6/12/17 14:06	SRT	B1
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	6/12/17 07:16	SRT	6/19/17 03:38	SRT	C
FIELD PARAMETERS										
Depth to Water Level	5.220		Feet		Field			6/8/17 11:21	BGS	D
Flow Rate	2.56		gal/min		Field			6/8/17 11:21	BGS	D
pH, Field (SM4500B)	6.890		pH_Units		Field			6/8/17 11:21	BGS	D
Sample Depth	35.000		Feet		Field			6/8/17 11:21	BGS	D
Specific Conductance, Field	788		umhos/cm	1	Field			6/8/17 11:21	BGS	D
Temperature	13.30		Deg. C		Field			6/8/17 11:21	BGS	D
Total Well Depth	43.500		Feet		Field			6/8/17 11:21	BGS	D
Volume in Water Column	56.272		Gallons		Field			6/8/17 11:21	BGS	D
Water Level After Purge	5.220		Feet		Field			6/8/17 11:21	BGS	D
Total Volumes Purged	3.01		Vol		Field			6/8/17 11:21	BGS	D

Shannon Butler

Ms. Shannon Butler
Project Coordinator

ALS Environmental

Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2236743 Manheim Auto Semi Annual

Lab ID: **2236743003** Date Collected: 6/8/2017 11:56 Matrix: Ground Water

Sample ID: **W-19** Date Received: 6/8/2017 13:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Alkalinity, Total	610	1	mg/L	5	S2320B-97			6/9/17 14:04	MSA	A
METALS										
Lead, Total	0.011		mg/L	0.0067	SW846 6010C	6/12/17 05:45	LXC	6/14/17 08:07	SRT	B1
Lead, Dissolved	0.0078		mg/L	0.0060	SW846 6010C	6/12/17 07:16	SRT	6/19/17 04:10	SRT	C
FIELD PARAMETERS										
Depth to Water Level	9.490		Feet		Field			6/8/17 11:56	BGS	D
Flow Rate	1.92		gal/min		Field			6/8/17 11:56	BGS	D
pH, Field (SM4500B)	6.670		pH_Units		Field			6/8/17 11:56	BGS	D
Sample Depth	15.000		Feet		Field			6/8/17 11:56	BGS	D
Specific Conductance, Field	1215		umhos/cm	1	Field			6/8/17 11:56	BGS	D
Temperature	14.60		Deg. C		Field			6/8/17 11:56	BGS	D
Total Well Depth	22.610		Feet		Field			6/8/17 11:56	BGS	D
Volume in Water Column	8.528		Gallons		Field			6/8/17 11:56	BGS	D
Water Level After Purge	11.090		Feet		Field			6/8/17 11:56	BGS	D
Well Volumes Purged	2.93		Vol		Field			6/8/17 11:56	BGS	D

Shannon Butler

Ms. Shannon Butler
Project Coordinator

ALS Environmental

Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2236743 Manheim Auto Semi Annual

Lab ID: **2236743004** Date Collected: 6/8/2017 12:27 Matrix: Ground Water

Sample ID: **W-10A** Date Received: 6/8/2017 13:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Alkalinity, Total	764	1	mg/L	5	S2320B-97			6/9/17 15:11	MSA	A
METALS										
Lead, Total	0.15		mg/L	0.0067	SW846 6010C	6/12/17 05:45	LXC	6/14/17 08:11	SRT	B1
Lead, Dissolved	0.0061		mg/L	0.0060	SW846 6010C	6/12/17 07:16	SRT	6/19/17 04:14	SRT	C
FIELD PARAMETERS										
Depth to Water Level	7.110		Feet		Field			6/8/17 12:27	BGS	D
Flow Rate	1.94		gal/min		Field			6/8/17 12:27	BGS	D
pH, Field (SM4500B)	6.790		pH_Units		Field			6/8/17 12:27	BGS	D
Sample Depth	10.000		Feet		Field			6/8/17 12:27	BGS	D
Specific Conductance, Field	1502		umhos/cm	1	Field			6/8/17 12:27	BGS	D
Temperature	15.40		Deg. C		Field			6/8/17 12:27	BGS	D
Total Well Depth	15.200		Feet		Field			6/8/17 12:27	BGS	D
Volume in Water Column	5.259		Gallons		Field			6/8/17 12:27	BGS	D
Water Level After Purge	8.830		Feet		Field			6/8/17 12:27	BGS	D
Well Volumes Purged	2.95		Vol		Field			6/8/17 12:27	BGS	D

Shannon Butler

Ms. Shannon Butler
Project Coordinator

ALS Environmental

Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2236743 Manheim Auto Semi Annual

Lab ID: **2236743005** Date Collected: 6/8/2017 13:01 Matrix: Ground Water

Sample ID: **W-6** Date Received: 6/8/2017 13:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Alkalinity, Total	324	1	mg/L	5	S2320B-97			6/9/17 15:22	MSA	A
METALS										
Lead, Total	ND		mg/L	0.0067	SW846 6010C	6/13/17 06:05	LXC	6/14/17 12:17	SRT	B1
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	6/12/17 07:16	SRT	6/19/17 04:18	SRT	C
FIELD PARAMETERS										
Depth to Water Level	11.110		Feet		Field			6/8/17 13:01	BGS	D
Flow Rate	2.95		gal/min		Field			6/8/17 13:01	BGS	D
pH, Field (SM4500B)	7.030		pH_Units		Field			6/8/17 13:01	BGS	D
Sample Depth	18.000		Feet		Field			6/8/17 13:01	BGS	D
Specific Conductance, Field	1237		umhos/cm	1	Field			6/8/17 13:01	BGS	D
Temperature	14.20		Deg. C		Field			6/8/17 13:01	BGS	D
Total Well Depth	23.000		Feet		Field			6/8/17 13:01	BGS	D
Volume in Water Column	17.478		Gallons		Field			6/8/17 13:01	BGS	D
Water Level After Purge	11.110		Feet		Field			6/8/17 13:01	BGS	D
Well Volumes Purged	3.04		Vol		Field			6/8/17 13:01	BGS	D

Shannon Butler

Ms. Shannon Butler
Project Coordinator

ALS Environmental

Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2236743001	1	W-9	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2236743002	1	W-4	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2236743003	1	W-19	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2236743004	1	W-10A	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2236743005	1	W-6	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

ALS Environmental

34 Dogwood Lane • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

ALS *2236743* 1

Client Name: Lot 5 Associates LLC

Address: 210 Hostetter Road
Manheim, PA 17545

Contact: Herm Ramig

Phone#: (717) 664-5326

Project Name/#: Manheim Auto Semi-Annual (M6, M12)

Bill To: Lot 5 Associates LLC

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required: _____ Approved By: _____

Email? [ ] -Y _____

Fax? [ ] -Y No.: _____

Container Type	—	PL	PL	PL										
Container Size	—	250 ml	250 ml	500 ml										
Preservative	—	HNO3	HNO3	None										

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Field Measurement	Dissolved Pb	Pb	Alkalinity							
			Enter Number of Containers Per Sample or Field Results Below.												
1 W-9	6-8-17	0956	G	GW	X	1	1	1							
2 W-4	"	1121	"	"	"	"	"	"							
3 W-19	"	1156	"	"	"	"	"	"							
4 W-10A	"	1227	"	"	"	"	"	"							
5 W-6	"	1301	"	"	"	"	"	"							
6															
7															
8															
9															
10															

Receipt Information (completed by Receiving Lab)

Cooler Temp: 1 Therm ID: 241

No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?		✓	DNW
(If present) Seals Intact?			
Received on Ice?	✓		
COC/Labels Complete/Accurate?	✓		
Cont. in Good Cond.?	✓		
Correct Containers?	✓		
Correct Sample Volumes?	✓		
Correct Preservation?	✓		
Headspace/Volatiles?			

Courier/Tracking #:

Sample/COC Comments

ALS Field Services: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other: _____

Project Comments:

LOGGED BY (signature): _____ Date: 6/8/17 Time: 1913

REVIEWED BY (signature): _____ Date: _____ Time: _____

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [illegible] ALS	6-8-17	1346	2 [illegible] NW	6/8/17	1346
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE [ ]

Special Processing: USACE [ ] Navy [ ]

State Samples Collected In: [ ] NY [ ] NJ [X] PA [ ] NC [ ]

Reportable to PADEP? Yes [ ] PWSID # _____

Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type: _____

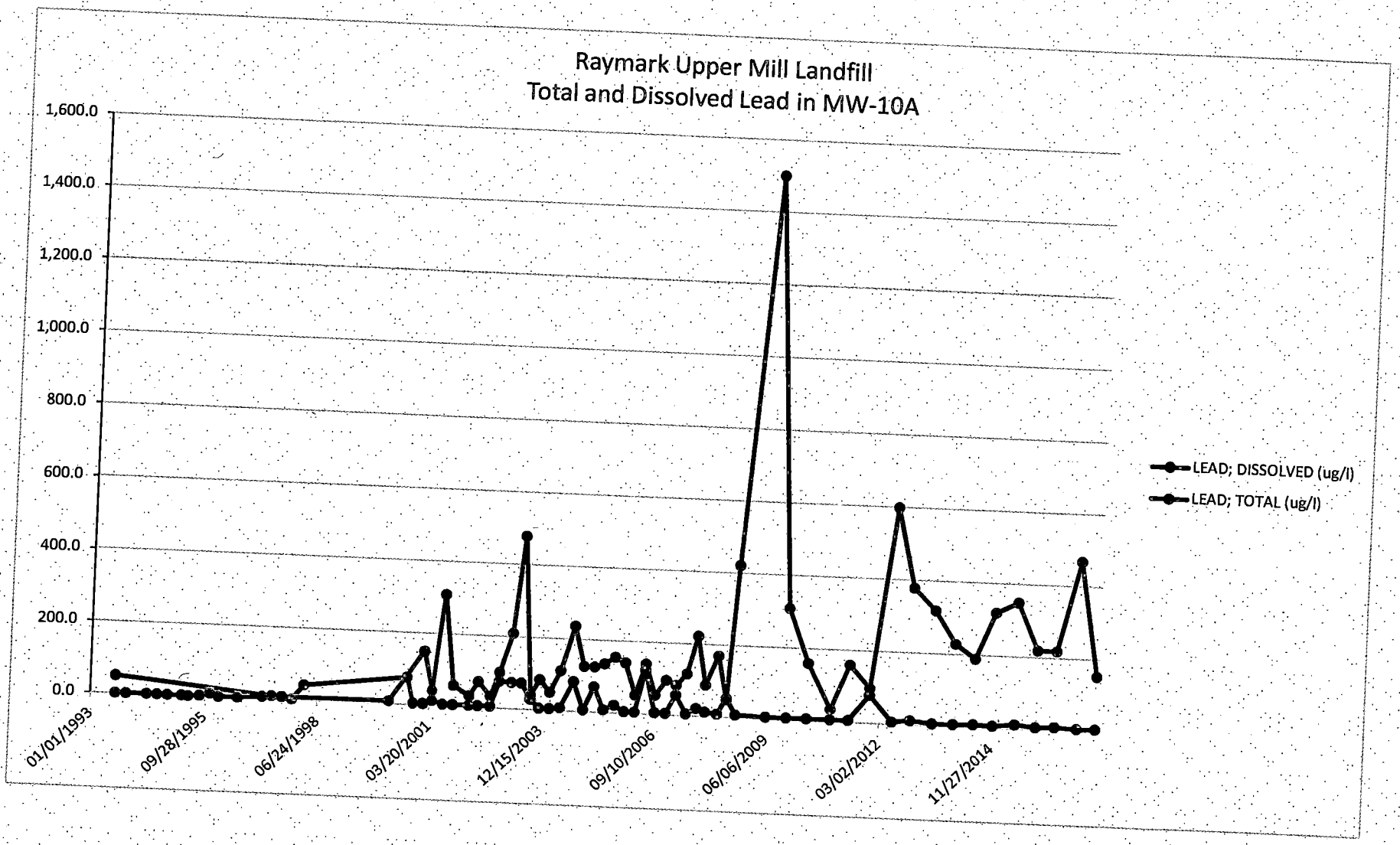
*G=Grab; C=Composite **Matrix - Al=Air; DW=Drinking Water; GW=Groundwater; Oil=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

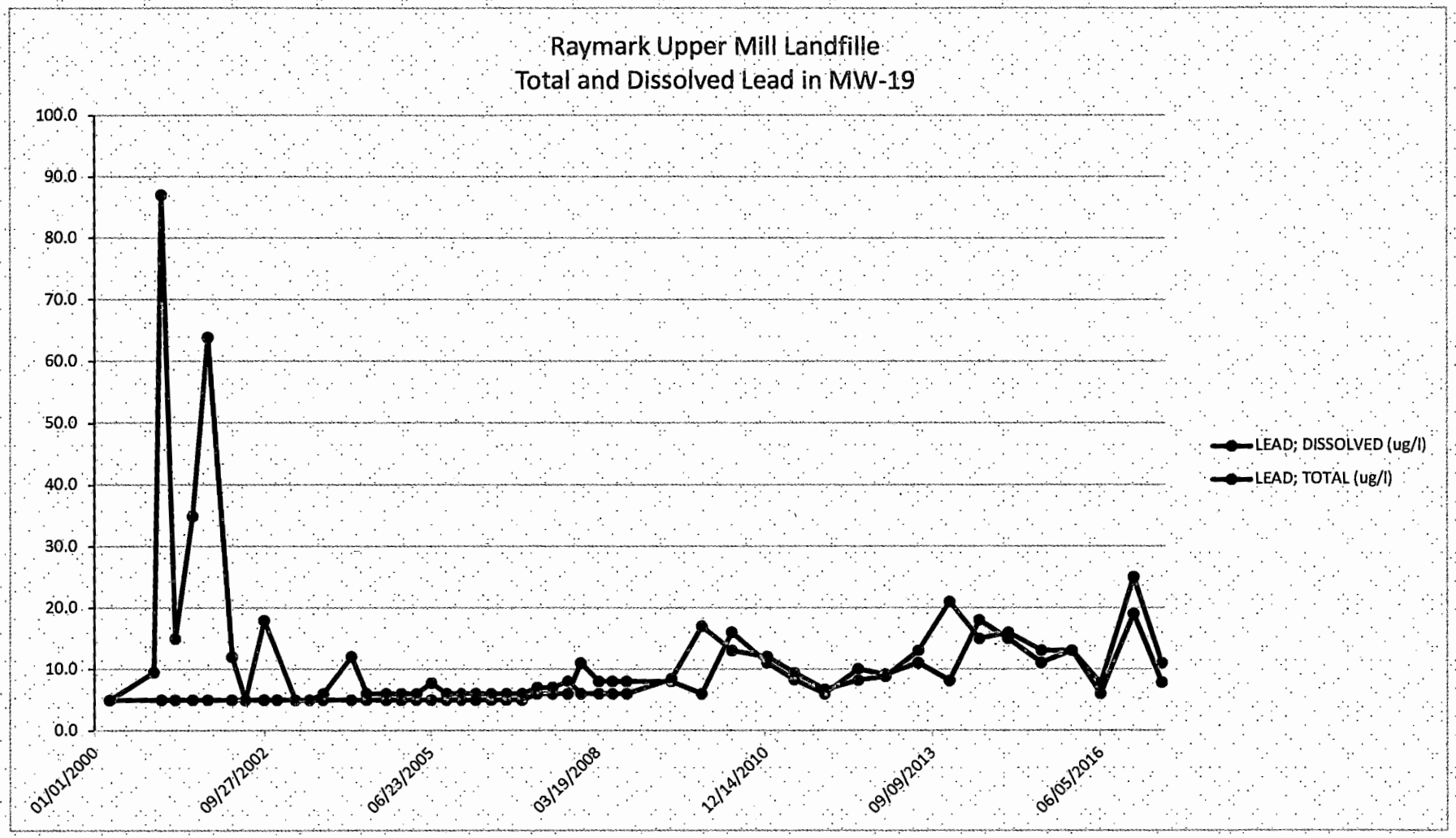
ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 8/04

ALS

APPENDIX C


Raymark Upper Mill Landfill
Total and Dissolved Lead in MW-10A
1,600.0
1,400.0
1,200.0
1,000.0
800.0
600.0
400.0
200.0
0.0
01/01/1993
09/28/1995
06/24/1998
03/20/2001
12/15/2003
09/10/2006
06/06/2009
03/02/2012
11/27/2014
LEAD; DISSOLVED (ug/l)
LEAD; TOTAL (ug/l)


Raymark Upper Mill Landfille
Total and Dissolved Lead in MW-19
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
01/01/2000
09/27/2002
06/23/2005
03/19/2008
12/14/2010
09/09/2013
06/05/2016
LEAD; DISSOLVED (ug/l)
LEAD; TOTAL (ug/l)

APPENDIX D

Photos Taken By: Serena Oldhouser

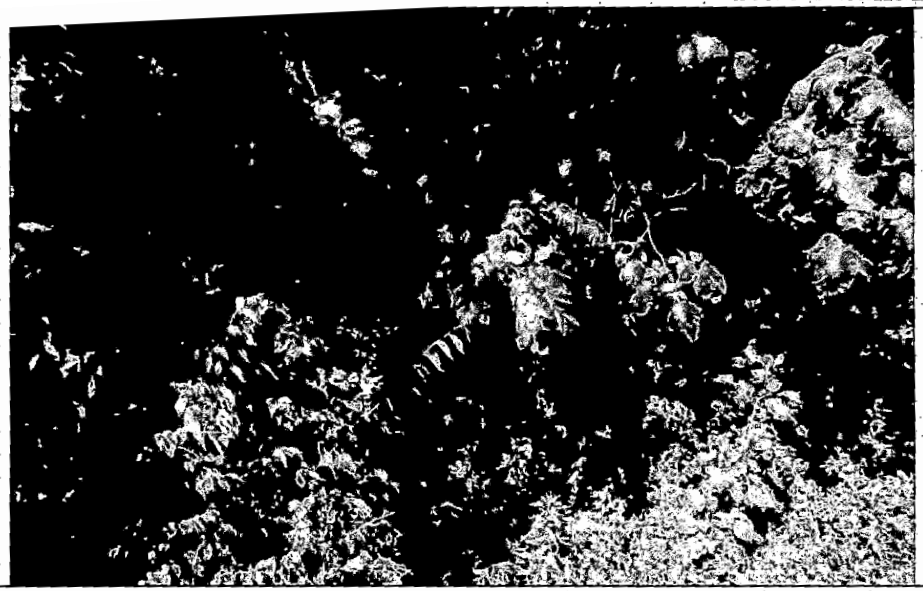
ption: View of building materials along the eastern asphalt cap

Caption: View of surface depressions

ion: View of surface depressions

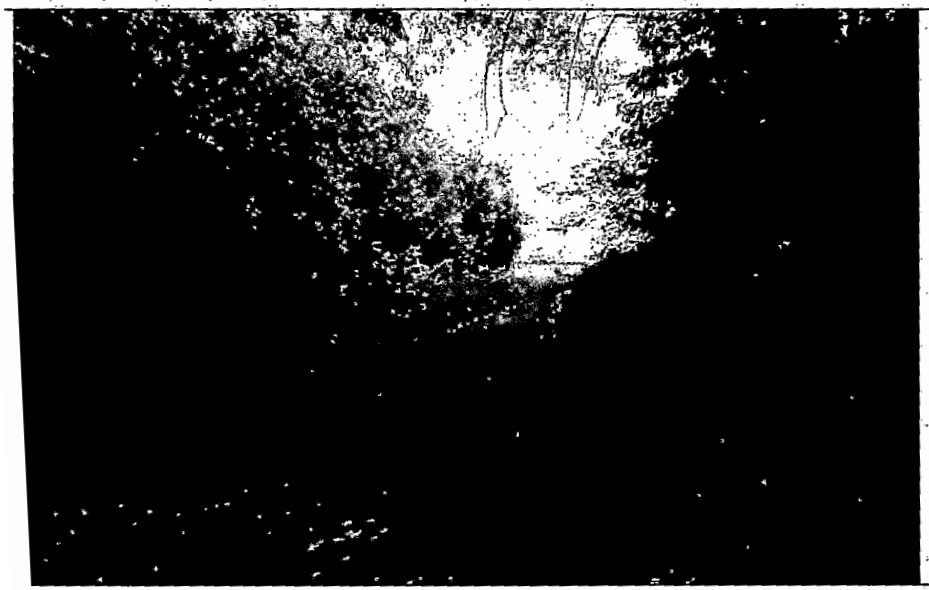
Caption: View of asphalt cap along eastern fence line

Photos Taken By: Serena Oldhouser



ption: View of entrance to MW-9

Caption: View of surrounding area adjacent to MW-9 entrance



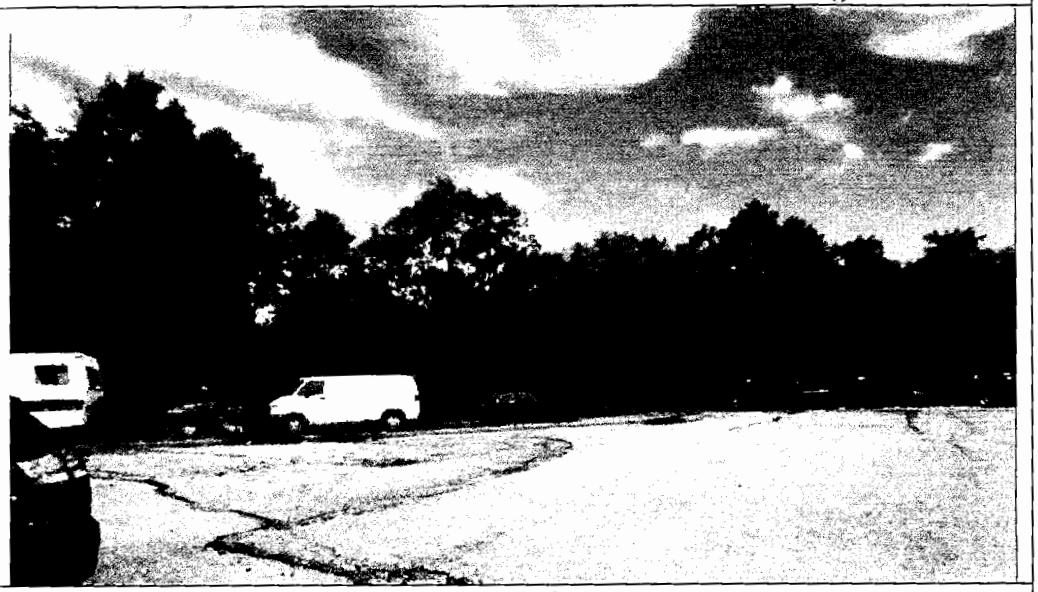
ion: View access road to MW-4

Caption: View of MW-4

oany or Site: Raymark Upper Mill Landfill

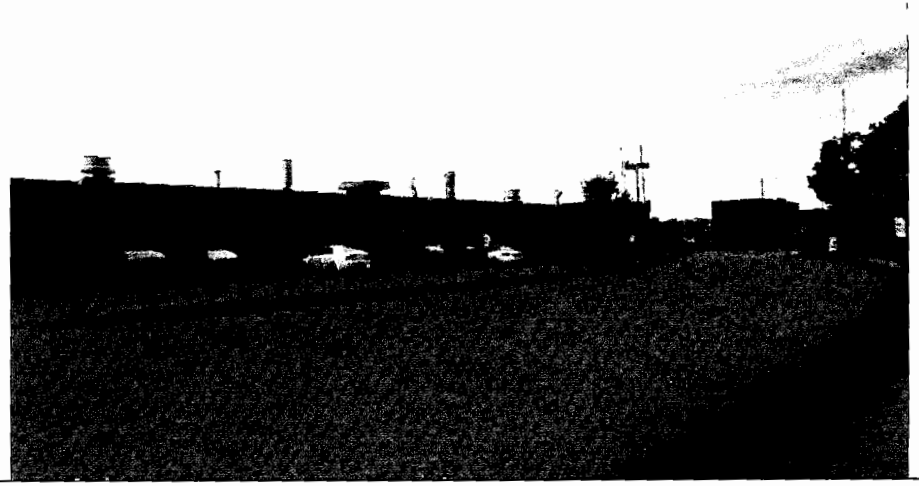
Date: June 8, 2017

ption: View western portion of asphalt cap



Caption: View western portion of asphalt cap

tion: View of western/central portion of asphalt cap



Caption: View refurbished buildings